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ABSTRACT

An overall view of the Initial Teaching Alphabet (i.t.a.) and its use with various groups of people are presented. The first part contains five addresses in which the historical background for i.t.a. is reviewed and insight into the man who invented it is given. Part 2 presents research reports of prefirst-grade and first-grade beginning reading with normal children. Included in Part 3, Special Groups, are reports of instruction with the disadvantaged child, the exceptional child, the remedial reader (both children and adults), and those who speak English as a second language. In Part 4, Methods and Measures, teaching methods are discussed as well as the problem of transition from i.t.a. to traditional orthography, the effect of i.t.a. on children's independent and creative writing, and administrative problems which are concerned with initiating i.t.a. in school districts and carrying on research designed to investigate its effectiveness. As the first part began with the history of i.t.a., the last section ends with a discussion of its future. Hope is expressed that educators will not disregard the opportunities that are offered by i.t.a. Tables and references are included. (DH)

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# i|t|a as a language arts medium

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# i|t|a as a language arts medium

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Edited by J. R. Block

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INTERNATIONAL i.t.a. CONFERENCES

1964 - First International i.t.a. Conference
Oxford University
Oxford, England
(No proceedings published)

1965 - Second International i.t.a. Conference
Lehigh University
Bethlehem, Pennsylvania, U.S.A.
(Proceedings available through the i.t.a. Foundation)

1966 - Third International i.t.a. Conference
Cambridge University
Cambridge, England
(No proceedings published)

1967 - Fourth International i.t.a. Conference
McGill University
Montreal, Quebec, Canada
(Proceedings available through the i.t.a. Foundation)

1968 - Fifth International i.t.a. Conference
Hofstra University
Hempstead, New York, U.S.A.

To be held from July 17 - 20, 1968
(Proceedings to be published by the i.t.a. Foundation)

# INTRODUCTION

Although the Initial Teaching Alphabet itself has appeared relatively recently on the educational scene, we can already begin to review the "history" of International i.t.a. conferences. The first International i.t.a. Conference was held at Oxford University in England in the summer of 1964. The next year, Lehigh University in Bethlehem, Pennsylvania served as host. In 1966, the conference again returned to Great Britain where it was held at Cambridge University. It was the Third International Conference and on this occasion was sponsored by the i.t.a. Foundation of England. This year, the Fourth International i.t.a. Conference is being held through the gracious cooperation of McGill University in Montreal, Canada and coincides with both EXPO 67 and Canada's Centennial Celebration of Confederation. In attendance are almost three hundred delegates, largely from the United States and Canada, but from as far away as Singapore and South Africa. Looking ahead to 1968, the Fifth International Conferenee will return to the United States with the host being Hofstra University in Hempstead, New York.

Perhaps, by way of introduction to this Fourth Conference, it would be appropriate to document the current status of i.t.a. throughout the world. As is well known, the first British experiments were conducted by the University of London and began in Great Britain in 1961. Two years later, the first large-scale experiment in i.t.a. in the United States was undertaken at Lehigh University under a grant from the Ford Foundation. Two years after that, in 1965, i.t.a. began to be used on a relatively large scale in a number of Canadian cities. Thus, i.t.a. is an infant. It is only six years old in Great Britain, four in the United States and two in Canada. Certainly, it is a very much older *idea* than that, having its roots in the early works of Sir Isaac Pitman, Benjamin Franklin, and other educators and linguists. Even the present form of i.t.a. is much older than the beginning of any of these research projects. Sir James Pitman spent much time and effort systematically evolving this alphabet and drawing upon the experience of both the successes and failures of his predecessors.

Like all infants, i.t.a. is experiencing remarkable growth. In 1961, 20 schools in Great Britain volunteered to participate in the first study. As of August of 1967, 2,205 schools are *known* to be using the alphabet to teach beginning reading in Great Britain. While no comparable figures are available for either the United States or Canada, i.t.a. programs are being conducted in every state in the United States and eight Canadian Provinces. The number of school systems adopting i.t.a. as *the* medium for the teaching of beginning reading for all first-grade children is increasing rapidly.

In the short period of time, which we can call i.t.a.'s "experimental" as opposed to its "developmental" history, it has attracted the attention and commercial involvement of over 85 independent corporations in the United States, Great Britain, and Canada. At present, over 900 titles are available in i.t.a. not to mention auxiliary equipment including teaching aids, filmstrips, movies, T.V. kinescopes, etc. In addition, there are five corporations producing i.t.a. typewriters.

i.t.a. is also a much discussed and highly controversial topic. There have been over 500 articles published in the major mass media (exclusive of newspapers) and professional journals.

There are other indications of the growth and diffusion of i.t.a. Thus far, the i.t.a. Foundation in America is aware of almost 40 different studies involving the use of experimental and control groups to assess the effectiveness of i.t.a. The total number of children involved in these studies approaches 20,000 and their combined cost would be close to 3/4 of a million U. S. dollars. Of these studies, approximately 25 have shown that the i.t.a.-taught children read significantly better than their T.O.-taught counterparts. Thirteen of the studies have found no significant differences between the two groups. *No study* thus far has shown that there is any danger that i.t.a. children will score significantly lower than children taught in the conventional alphabet on any general measure of reading ability. Most of these studies have focused entirely on reading; yet it is clear as an alphabet, i.t.a. may be used both passively in reading *and* actively in writing. Most studies, which have been concerned to any degree with the problems of writing, admittedly have not completely controlled for the opportunity for T.O.-taught children to write. In most cases, this seems to have been the conscious decision of educators who recognize the fact that, given the inconsistencies of English, it does not readily permit very young children to express themselves with T.O. Those studies that have dealt at all with writing indicate clearly that children tend to write much longer and more interesting stories than children taught with traditional orthography.

The fears originally expressed (i.e., that i.t.a-taught children will spell more poorly) seem largely to have been dissipated. Typically, at the end of the first year, children taught with i.t.a. spell *less well* on traditional standardized measures of spelling achievement than their T.O. counterparts. In those few studies, where spelling according to T.O. standards was studied based upon children's written work (i.e., where the child chose the word to be spelled rather than being presented with a standardized list), the data suggests that i.t.a. children tend to spell *better* at the end of the first year than T.O. children. After two years of instruction, when transition has been completed, the evidence is clear that i.t.a. children spell *at least as well* and in many studies, significantly *better* than T.O.-taught children.

Finally, the subjective reports of classroom teachers concerning heightened enthusiasm toward school, toward reading and the development of generally more positive self-concepts are testimonials to the value of using i.t.a.

Delegates to this conference and readers of the proceedings may be aware of a general shift in the nature of the interests of educators and i.t.a. in comparison with earlier conferences. Based upon the titles of papers presented at these meetings, there has been a move away from traditional studies of experimental groups using i.t.a. and control groups using T.O. in first-grade reading. There is an increasing concern with the use of i.t.a. for special groups; the disadvantaged; reading failures among both children and adults; and the use of i.t.a. in dealing with exceptional children. There is concern about when to use i.t.a. and how to use it. Perhaps most important, there is concern with i.t.a. as a medium for *communication.* Reading is not disregarded, but is recognized as only one channel for communication. Continuing reference is made to the more active means of communication of both writing and speaking (in the use of i.t.a. to assist speech articulation). This shift in interest does not appear to represent a reduction in interest in the use of i.t.a. for teaching beginning reading to "normal" children. Rather, it seems to be in recognition of the very large number of studies of this problem which have already been conducted. It appears to represent a search for *additional* uses for this important medium of communication. Like the increase in number of corporations involved in the production and distribution of i.t.a. materials, there is an increase in the number and range of professional disciplines interested in investigating the possible uses of i.t.a. in their own areas of concern.

It is my hope that this conference (and the proceedings which will be published) will prove to be challenging. I believe that the characteristics of i.t.a. and the assumptions built into materials using the alphabet should provide us with reason to re-think even our most cherished and established concepts in language arts education. Perhaps, some of the issues which have been clearly identified as "dead and buried" should be exhumed in the light of the new characteristics of this medium. The child of the 60's and 70's is likely to be a very linguistically different animal (if only as a result of television) than was his older brother or sister (or perhaps his parents and even grandparents) upon whom these "principles of reading" were evolved. The time may well have come to seriously re-examine these issues even if i.t.a. had not provided us with a tool for language which was not readily available before. It remains to be seen how effectively we can work with it.

## PART I - HISTORICAL BACKGROUND

In order to fully appreciate i.t.a., it is important to appreciate the nature of the man who has developed it - his thought processes during its development - and the historical precedence from which he drew his concepts and conclusions. This section of the proceedings deals with two individual papers presented at McGill University and a panel session discussing the historical background from which i.t.a evolved.

Mr. Theodore Dolmatch, the President of Pitman Publishing Co., was invited to address the conference as the banquet speaker. His paper, which is first in this volume, will give the reader some insight into the man who developed i.t.a. and the context in which it finds itself in contemporary education.

The papers by Sir James Pitman, Dr. Godfrey Dewey and Dr. William Gillooly were presented in a session entitled Historical Backgrounds. Sir James' paper will give the reader a personal insight into the thinking, planning and persuasion from which i.t.a. evolved. Sir James has been a representative in the House of Commons and the director of a major publishing house. He is a serious and dedicated scholar. This combination has led to the planned evolution of the 44 characters we know today as i.t.a. As Sir James notes, he and his colleagues carefully considered the design of each character in the light of their vast combined experience and clearly delineated goals. Of the literally hundreds of artificial alphabets which have been designed in the past, none have developed so carefully and systematically over so long a period of time out of such a fertile background.

Some critics of i.t.a. have suggested that i.t.a. is a spelling reform in disguise. Some proponents of i.t.a. have suggested that it *should* be used to reform the spelling of English. Dr. Godfrey Dewey is the "Dean" of spelling reformers in the United States. His exceptionally scholarly paper attempts to put the issue of i.t.a. as a spelling reform in perspective. He notes in the second sentence of his introduction, "Those very features, both of symbol forms and spelling rules, which make it a better initial teaching medium (i.t.m.) than any other heretofore devised, would be rightly adjudged detrimental in a spelling reform notation."

Dr. Gillooly's paper deals with a review of an early study of a forerunner of i.t.a. Essentially, he concludes that the early success followed by later abandonment of this approach to teach beginning reading was largely a result of the Hawthorne effect. Further, he suggests that this is the major explanation for the success of i.t.a. In the editor's paper dealing with criticisms of i.t.a. in this volume, the problem of the Hawthorne effect is dealt with at some length. The present author has also dealt with the reasons for failure of earlier initial teaching alphabets in the proceedings of the Second International i.t.a. Conference (Block, 1966). In addition, in this volume, Dr. Vera Ohanian discusses the implications of i.t.a. as they relate to earlier research with the teaching of reading representing either phonic or look-say approaches. Dr. Dewey's paper in this section suggests at least eight reasons for the failure of previous initial alphabetic systems. The second paper by Sir James Pitman partially reviews some of his considerations in the attempt to distinguish between i.t.a. as a *reading* as opposed to a *writing* system. He deals with the problems of sounds versus characters; the problems of individual accents and local dialects; and idiosyncrasies in speech.

REFERENCE

Block, J.R. i.t.a. -- The American Scene. In A. J. Mazurkiewics (Ed.), *i.t.a. and the World of English*. Hempstead, N.Y.: i.t.a. Foundation, 1966

# 1. FALSE PROFESSIONALISM AND THE EIGHTH VIRTUE

Theodore B. Dolmatch
i.t.a. Publications Inc.
New York, New York

My concern is less with i.t.a. and more with what a group of French theologians call the *eighth* virtue. We've long accepted the seven deadly sins, and contrast them with seven more or less conventional virtues. W. H. Auden called his generation's time the "Age of Anxiety." Perhaps it was he who provided the hint that the French Vincentians needed. For the eighth virtue, they said, may be called *anxiety*. It is not the kind of anxiety which psychiatrists treat, that *Angst* that wells up out of nameless fears. It is, rather, that anxiety which does not allow some people to accept what *is* as that which must be. It is dissatisfaction with the conventional wisdom, with the obvious, the "approved." It is rarely popular.

i.t.a. was the creation of a man with this strange virtue, and with few of the imprimaturs possessed by the professionals in education. Although Sir James Pitman fits well within the British tradition of the "amateur," we in the United States have no such category in which to place him. Particularly since he has had several careers in fields as disparate as government and publishing, it is difficult to accept him as an "educator." Indeed, he is not one in the traditional sense, and as difficult as it is to fit him into any neat category, perhaps the proper word for Pitman is "innovator." He is not *the* inventor of a phonemically-consistent alphabet (there have been many such alphabets) but it was through him that his alphabet began to get the attention it deserved throughout the English-speaking world.

His early efforts to gain a hearing for i.t.a. were successful only because of the force of his own persistence, his position as a member of Parliament, substantial expenditure of his own money, and an informal network of enthusiasts, very few of them professional educators. None of these, with the exception of money -- always such a marvelous motivator -- is a conventional mechanism for educational innovation.

What made matters worse was that he took a completely new tack -- one not even considered by most specialists. For years they had been attempting to deal, by a variety of methods, with the difficulties of learning to read. All of their attempts implicitly assumed the fact that the *medium* -- the alphabet itself -- was immutable. With a lack of caution that could be considered as impolitic as it was irregular, Sir James suggested that many reading difficulties have their roots in what Coleridge called "our lying alphabet" itself.

Of course, there were some enthusiasts who had, as early as the 16th century, traced reading problems to the alphabet and its odd combinations of spellings. They were the spelling reformers, and they achieved relatively little success.

Pitman had what might be called a "genetic" involvement in the spelling reform movement since his grandfather, Sir Isaac Pitman, was one of these early pioneers; but Pitman's original perception -- that the difficulties of our alphabet were significant at the learning stage and irrelevant once true literacy was achieved -- was one of those simple ideas which are the largest burr under the specialist's saddle. The "reading expert" should not be blamed too much for missing this crucial point; the spelling reformers did so too. Perhaps their futile fight and quixotic persistence is the other side of the coin. One group says change the alphabet permanently; the other says don't change it even temporarily.

If the alphabet could be made rational during the beginning period in which decoding skills must be learned, and if it were made as compatible as possible with traditional orthography so that there would be no transition problems, Sir James reasoned -- but the rest, as no poet ever said, is history. All the idea needed was blood, sweat, and tears, and Pitman had them for his birthright. If Leonardo was the first crank, as Bernard Berenson once said, here was another!

What might this mean to the conventional wisdom? Nothing good! The business of teaching children to read is a multi-million dollar affair. Scores of commercial organizations have their profitability based on reading materials printed in a conventional way, though designed to surmount problems precipitated in large part by that conventional orthography. Hundreds of specialists became specialists in dealing with difficulties created, in significant measure, by the very alphabet which they used to try to eliminate those difficulties. Their reputations (and their incomes) became rooted in the 26-character alphabet. Thousands of their graduate students walked in their footsteps, and became, in their turn, experts themselves. Their research always focused on methodology, not on medium, and -- if the medium turned out to be the crux of the matter -- that research itself might come into question. No wonder that the horse said, upon seeing the automobile, "I hope it doesn't work!"

So the issue was joined on grounds that are familiar to the historian of science. He can cite case after case to show as Veblen pointed out, that "the accredited learning class and the seminaries (What a pleasantly archaic word!) of the higher learning have looked askance at all innovation." There was Gallileo and Bruno, Pasteur and Lister, Mesmer and Freud, Semmelweis and -- but the list is too long either to cite or to comprehend. Of course, these men lived long ago, when we were much less ready to reconsider presumably eternal truths than we are now. Today's scientific expertise and tolerance for the new are greater than yesterday's, we presume. Or are they? For example, Dr. Vannevar Bush, a great contemporary who made substantial contributions to science, testified authoritatively before a Senate Committee in 1945 that a 3,000 mile high-angle rocket would be impossible for many years.

> The people who have been writing these things ... who annoy me ... have been talking about a 3,000 mile high-angle rocket shot from one continent to another carrying an atomic bomb so directed as to be a precise weapon which would land directly on a certain target which is a city. I say technically I don't think anyone in the world knows how to do such a ting, and I feel confident that it will not be done for a very long period of time to come ...

But we all know that just such a rocket was launched only twelve years later! And it such certitude is a problem in the physical sciences, what of the *social* sciences, where measurement is less accurate, where phenomena are more subtle, and where data are more filtered through the whole cloth of personality?

Let me paraphrase John Galbraith by substituting the word "education" for his "economics." He was, of course, talking about his own field when he made a useful analogy. "In the physical sciences," he said,

> change is associated only with discovery, with the improved state of knowledge. The matter being studied does not change. In *education* there is a change both in the state of knowledge, and in what is being studied. (People in *education* are not inherently

> resistant to novelty, but they react very differently to the two types of change. New knowledge, and new interpretations of existing knowledge, are much welcome. Change in the underlying institutions is much more slowly assimilated.

And what is more "institutional" than our traditional alphabet?

It is not that past truths are no *longer* true; some of them never were. It is not that the problems of the present are imperative; they are no more --- and no less --- imperative than the problems of the past, for they are much the same problems. By their very existence they provide testimony to our inability to do something meaningful about them.

What *is* different is the way they now impinge on us. The poor and the troubled leave their ghettos and confront us directly. The wronged no longer gnaw only at their own vitals, they gnaw at ours. The certitudes of the middle-class conscience are less certain now.

Of course, schools were never better. Education never more broadly based. Teachers never better trained or better paid. Automobiles, similarly, were never better, never safer. Why do we now try to make them still safer? Why do we suddenly take aim directly at this one, old problem? Why do we *now* invent and mandate new mechanisms to make cars safer still? Why do we now recognize the problem for what it is, and why do we --- government, manufacturers, experts, all of us -- *now,* at this point of time, direct ourselves to issues like improving the safety of automobile transportation? While about 50,000 traffic deaths per year occasioned only cautionary concern in the past, the time suddenly came when one private voice, from outside the auto safety establishment, stirred us to action.

That one private voice no longer cried out in the wilderness. It was a catalyst which was added to the dismal record of 50,000 auto deaths a year. Suddenly, our platitudes about safe driving were not enough and something important happened. What was important was a change of focus, from the easy certitude that the most dangerous part of the mechanism was "the nut behind the wheel" to a more sophisticated perception that the machine itself could be made safer ... that we could do only so much with human psychopathology, and so much more with the inanimate mechanism itself.

As far as education is concerned, a parallel exists. Children were never better educated? True, but never were more children miseducated, more teachers ill-prepared to cope, more schools so in need of change. With all of this, never have social and political imperatives been as pressing. We have recognized that our world has changed, and knowledge, the currency of education, has increased geometrically.

However, we are always slow to cash in our intellectual chips for new currency. We continue to add to our inventory of obsolete weapons in order to fight a war that we have already lost. And here, too, the one private voice -- Pitman's -- has stirred us and has produced from outside the walls of the profession a change in literacy training of great importance.

What concerns me here is not i.t.a., as important as it is, but rather the phenomenon of change, particularly change brought about by a force from outside of the establishment. "Establishment" is a useful word; it defines those people who are "in" who are, in the most basic sense, in *power*. Every field has its establishment; every Senate, its "club." Getting in is sometimes difficult. Being out is by itself sometimes sufficient to make one "wrong," often sufficient to make one irrelevant.

In education, there are a variety of Establishments: For college professors of English, the establishment is largely congruent with the Modern Language Association. For high school teachers of English, on the other hand, with the National Council of Teachers of English. For reading, with the International Reading Association. The teachers' colleges themselves make up one special group, because of their dual role in preparing people for certification and in advising on the standards for certification. When the circle is as complete as it is in the case of the preparation of teachers, it is indeed difficult to break. Witness the abortive attempts of the liberal arts colleges to influence the preparation of teachers; only Harvard -- very much an establishment on its own -- has so far won this fight.

One would have to be a revolutionary -- which I am not -- to suggest that all establishments are by their nature bad. But perhaps the conventional wisdom is almost always unwise and expertise almost by its nature narrow. As Admiral Rickover (who is usually not on my side of the fence) charged, "Our society is threatened by any man who knows *method* but not *meaning; technique,* but not *principle.*" Method and technique! The last refuges of the professional. What would we be without them?

In New York, we recently had a World's Fair, too, conceived and executed by a master of method and technique. Unfortunately, he left meaning and principle to others, and produced a grandiose fair with a core of emptiness which took precedence over everything in it. On the other hand, the Expo people were visited some time ago by a Japanese delegation, seeking advice on their own forthcoming exposition. "But you are amateurs," the Japanese said, aghast at the Canadians' approach. "We *were* amateurs!" was the reply.

Can we then gauge professionalism by the quality of the accomplishment and the seriousness of concern? Why not?

The true professional, then, is our opportunity as well as our gadfly. *False* professionalism plays us false. We are forced to be alert to the two kinds of professionalism in education because education concerns itself with that most involved subject, the raising of our young.

For the young, we provide a number of institutions other than our conventional alphabet, of course. The school itself is one. It, in turn, has its own sub-institutions: testing, the marking system, organization into compartments called grades, curricula, and syllabi. The most significant question is whether this institution, this chip off Mark Hopkins' old block of wood, is the most efficient instrumentality for accomplishing what must be accomplished.

Since so many critics have suggested changes in all of these institutions, it seems reasonable to suggest that they are not perfect. Today, true professionals question many of the truths that have bolstered us in the past. *False* professionalism is based on the perpetual validity of every old institution, every old truth. The more fundamental a change, the more the false professional is threatened. The kind of change that is acceptable is *cosmetic*. Like the automobile stylists who take precedence over engineers, they prefer a new tail fin to a collapsible steering column. Irrelevant change, which requires no change in perception, which alters shadow but not substance, is fine. It provides the illusion of growth, the comfort of progress. But let some iconoclast really push into sacred groves, he subverts both the sacred cow and its cowherd alike.

One of the most basic elements in the educational compound is the concept of grades (not "grading", which is still another institution). Children exist on grade *levels* and approach either edge of these arid plateaus at their peril. It was a second-grade teacher who said to an i.t.a.-taught child that by returning to conventional second grade readers, the child would "get back where she belonged." Back to less exacting verbal skills, perhaps, or simply back to work that challenged the teacher less. This was, indeed, a *second-grade* teacher, but not much different from those folk-heroes of education, the professors of pedagogy, who have long preached that there is learning appropriate for each age rather than for each child.

Suppose our assumption that a boy "should" weigh 65 pounds at 10 years of age had similar ramifications. Would we -- if we were overweight -- "skip" him and hold an eleventh birthday party? If he weighed only 55 pounds, would we keep him in his ninth year for another "term"? Why do we operate on arithmetic means and averages for *intellectual* growth, but accept only the generality of their usefulness for physical growth?

Given the general accuracy of most physician's scales, we can assume that children who weigh 65 pounds, do so -- on Earth, at least, if not on the moon. But can we be as sure that children who score 100 on our conventional measures of intelligence have "normal" intelligence? We have been using standardized tests as if they offered the revealed word. We measure linguistic ability and call it intelligence. We give tests of comprehension to insure that our experimental and control groups are equivalent; then give other tests of comprehension to evaluate the differences between them.

Just the other day, I read a Kettering Foundation report of a Seminar on the Chemistry of Learning. The eight distinguished scientists agreed that what has passed for "learning theory" in psychology texts is irrelevant and probably incorrect.

This is directly relevant to i.t.a. for too many researchers have used conventional measures and assumptions to gauge i.t.a.'s validity -- without considering whether or not the tests are either appropriate or, most important, viable tests of what they purport to measure, or whether their assumptions hold, either.

"Norms" -- if they exist -- presuppose equivalencies of other characteristics. What is a first-grade i.t.a. reader? If a first-grader reads an i.t.a. text that conforms to third-grade norms in terms of vocabulary load, running words, and so forth, what is happening in terms of grade level? I.Q.? comprehension? If we test a violinist's proficiency by measuring his performance on a 'cello, can we really presume that our results will be meaningful, despite our impressive bank of computers and our very professional knowledge of statistics?

But we cannot discount method and technique; they are needed. So leave method and technique; we need them both. And in any case, *meaning* is a personal concern. Each of us extracts it as we are fit to do so. It underlies much of what we do, if we could only strip away the rococo plastering to see it unadorned.

But still there is *principle,* which rests on virtues that are as old as time, and as fleeting. These virtues include the three theological virtues, called faith, hope, and charity. The false professional has little faith in people different from himself, no hope, and small charity for those who disagree with him. The true professional has faith in both himself and others, hope for the hopeless possibility of improvement in the condition of man, and charity for others and even for their mistakes.

There are four more -- traditional, cardinal virtues -- strength, justice, prudence, and moderation. I find strength the exclusive possession of the strong, and they are neither right nor wrong, neither false nor true, because of their muscles. Justice can be punitive or merciful, and, therefore, of itself not a private virtue of anyone. The last two -- prudence and moderation -- are polite but (in my terms) no ends in themselves. Our day calls for vigor and the redress of old wrongs. It is hard to be a prudent fighter for the right, a moderate opponent of evil. The false professional can disguise his inaction as prudence, his sterility as moderation.

So the key lies in the eighth virtue: *anxiety.** Being anxious means realizing that life is a continuous process of creation, not stubbornly adhering to outworn survivals. The eighth virtue conditions all the other virtues. It is possessed by the true professional, and all his work is conditioned by this neural itch.

Can one train for anxiety? Can one build principle without it? Perhaps for the true professional this virtue is to be honored above all others, for in anxiety lies the distinction between him and his false colleague.

## 2. THE HISTORICAL BACKGROUND OF I.T.A.

Sir James Pitman, K.B.E.

In one sense it would be correct to say that the history of i.t.a. began with my birth. I was born into a unique environment - a family deeply rooted in Education generally, and one with a particular root in communication by language. Samuel Pitman (1787-1863), (my great-grandfather and the father of Isaac) was resident in Trowbridge, a small English town in Wiltshire. He was a weaver there in the days of hand-loom weaving, and a teacher not only on Sundays but in the evenings and very early mornings of week days too. He was very exceptional in his time. In those days of long ago few of the "working classes" and their children were even literate, and the opportunities for them to become literate - much less to become as highly educated as Samuel Pitman and his children - were not institutional, and the time for home study was very meagre, such were the demands on all members of a family for unremitting work, even before those days of "the hungry forties".

Born to this Samuel and to Maria Pitman on January 4th, 1813 was Isaac Pitman, my grandfather. He was one of seven brothers and four sisters, all of whom were outstanding examples of what could be done in higher education, even when in only very few centres - certainly not in such small towns as Trowbridge in Wiltshire - were facilities for higher education available at all.

I must refer my listeners to the three standard biographies (1,2,3) of my grandfather for evidence of his scholarship in Latin, Greek, Hebrew and Music, as well as in his chosen subject of what we today call Linguistics.

My father in the third generation regarded education - of all children as well as of his own children - as the *chief* concern of the adult generation.

He moreover passed on to me for acceptance as an axiom and a tenet of faith that what is recorded whether in shorthand, in longhand, in Morse, in Braille, or in any other form ought to be related to what needs to be recorded, namely, the *real* language, the spoken language, not to its indirect version, the convention orthography. He also passed on to me a deep veneration of my grandfather, of his scholarship, his ideals, his hard work, his patience, and his powers of persistent but well-mannered persuasion. To all these merits my grandfather, who was one of Britain's, and so of the World's, first trained and practised teachers, added a great practical ability. He was able happily to combine together his great learning and all those traits of practicality with a lifetime's experience as a teacher, a practical printer, and a working Editor.

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* From "The Eighth Virtue: Anxiety," *Bulletin des Conferences de Sainte Vincente de Paul* (1963).

The special "piety" of the founder of Rome towards his father became personalized round my grandfather. He was my boyhood's hero, and has remained my hero ever since.

Yet another factor of the environment into which I had been born has been Isaac Pitman's Library - a working library, unique not only in its comprehensiveness, but in the inclusion of even very rare books which, so far as duplicates exist, are scattered as collectors' pieces over the libraries of Britain and America. One book (*"A Short Introduction or guiding to print, write, and reade Inglish speech: conferred with the olde printing and writing: devised by William Bullokar". 1581)* is of particular interest and indeed of value because it is the only copy known in the world, and the copy in which the author made marginal notes and corrections and signed his name.

But of all this wonderful library by far the most helpful, and thus precious, was the complete set of Sir Isaac's own publications from the first issue of *The Phonotypic Journal* in 1842 to the last issue of *The Speler* in January 1897, published shortly before his death on 22nd January 1897.

Edited and largely written by him, sometimes monthly, sometimes every other week, but *weekly* for over forty years, from 1852 to 1894, they are a gold mine, or even a diamond mine, for the worker in this field, and a source of the dimensions and convenience of an oil field. Addressed mostly to scholars, his publications comprehended also in "The Juvenile Department" a weekly reading exercise for classroom use, which in total furnished to any teacher a volume of teaching material almost as great as that available in i.t.a.(now some 800 different titles by over 80 British, American, Canadian, and Australian publishers) - and as full of nineteenth century moral teaching as The McGuffey Readers.

In another sense the history of i.t.a. began very much later, because had I not happened in special circumstances to have met the late Arthur Lloyd James, all this environmental potential might well have enriched no more than my own life. Arthur Lloyd James and I had for long been friends, my father having introduced us. It was with much rejoicing, therefore, that in the early thirties he, his wife, my wife and I, found ourselves passengers on a Cunarder travelling together from America to England. From the many hours of pleasant company arose not only the challenge from him to turn my potential into achievement*, but an offer from him to accept the challenge also for himself (if I would accept it for myself) and thus add his very great expertise and potential to a common objective.

We there and then planned a line of action. We would approach Sir George Hunter (the Chairman of The Simplified Spelling Society), Mr. Thomas R. Barber (the Secretary), and Professor Daniel Jones, Harold Orton, Walter Ripman and Professor Sir Gilbert Murray, for the purpose of establishing what might confidently be put forward on a digraphic basis as a basis of recording the English language (i.e. the spoken language) to which no valid objection could be taken by any leading phonetician or linguist - at least by any one who would accept its principles as set out on pp. 12-14 of *Simplified Spelling* Fifth Edition (Revised) 1938, and the over-riding policy as expressed there on p. 15 -- "In none of our compromises is the convenience of the coming generation sacrificed to the habits of the adult generation of today. This we conceive to be the fundamental condition of a truly simplified spelling".

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* "What is the use", he said, "of your having all the right ideas, all the right upbringing, all the right social, educational, publishing and personal pre-conditions so that you are the one person who might pull it off, and your then sitting back and leaving it to George"?

We recognized that each one of us would have preferences for minor variations from the general accommodation which we hoped to reach, but that any departures would involve no compromise of principle such as might deter us from standing up to all comers to defend as *a* recommended system what we would thus have agreed in common.

In the event, our faith was justified. Accommodation was possible. Unreserved agreement was achieved, and "Simplified Spelling" was published in 1938.* Our expectations of the need to leave open an elasticity for minor variations, but to insist on agreement in broad principle, has also been borne out. We consistently tell ourselves, and all since who had variants they wished to push, that the time for consideration of variants would most certainly come later, as soon as a decision in principle to accept a system as a new convention had been taken - and that meanwhile arguing amongst ourselves as to what new system might be better than another new system, and above all amending what we had agreed upon, would be only harmful to the cause of winning general acceptance of the principle that a new system was needed and could be agreed upon.

While from that date, and in all its dealing with individuals, the Society has adhered to that conviction, it did in dealing with the American Simpler Spelling Association publish a two-page sheet in 1951 accepting just such minor amendments, but this exception was made in order to establish complete agreement between the existing recommendations of the British and those about to be re-made of the American Society: moreover they were all in the direction of a more perfect application of the "fundamental condition", that the convenience of the coming generation should not be sacrificed. Moreover we recognized the importance of the principle that if and when any change should come, it must be not a unilateral, but a universal one, coming about in both, indeed all, of the great English-speaking countries. Indeed it was clearly desirable to end the present barriers to communication in the printed word throughout that great community (otherwise sharing in common the printed form of their language) which were brought about by the earlier *unilateral* changes, minor as they were, (e.g. center, centre; honor, honour, etc.) introduced by Noah Webster, Theodore Roosevelt and Andrew Carnegie. Here appeared to be the opportunity to undo harm ignorantly done.

The long and careful work by such a high-powered committee was to prove a period of gestation for the initial teaching alphabet and one of the greatest possible value to me in my future work and objective. Although the objective of the Committee was Reform in Spelling, and not Innovation in Education, the foundations of the suitability of i.t.a. as a (temporary) learning medium were laid during that period. Our then purpose - my then purpose - was one much more radical than my subsequent less provocative, but essentially different, one, but there could have been no better preparation than the hours and hours spent in detailed discussions with such outstanding scholars in this field as Sir Gilbert Murray, Daniel Jones, Arthur Lloyd James, and Harold Orton, spread over some five years, and all conducted within the framework of objective fact and meticulous research inherited from Walter Ripman and William Archer.

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* *"Simplified Spelling" - Fifth edition, revised.* (The key "C8" indicates that it was printed in 1938. It therefore ante-dates *"New Spelling" Fifth edition* printed in 1940). It up-dated, and with Ripman's full concordance, the 1912 edition of *Simplified Spelling*.

Another date mark in the history of i.t.a. was 5th of August, 1947 when Professor Daniel Jones and I motored to Ayot St. Lawrence to discuss with George Bernard Shaw whether he might not designate the Simplified Spelling Society as the beneficiary under his Will.

Until my visit that day I had no inkling that Shaw was intellectually and immovably opposed to Spelling Reform. Moreover, until then I had not appreciated the difference - a very great one - between reform of the Roman alphabet and reform of spellings *in* the Roman alphabet. It was thus under a misunderstanding that we had gone, expecting the great man to allow his money to support a Society to whose work, as it soon appeared, he was so strongly opposed. He was very courteous, very hospitable, very charming, extremely knowledgeable, but very firm. He knew what he wanted, and it was not Spelling Reform: He knew what he did not want, and that was anything to do with Spelling Reform.*

After our return, in disappointment and surprise at the unexpected views of the great man, the logic of his case worked like leaven on at any rate my thinking. Thenceforward I saw three objectives - none of them objectives of the Simplified Spelling Society or of The Simpler Spelling Association unless those bodies were radically to alter their policies and declared purpose.

As I thenceforward saw it - and see it all the more clearly now because of the success of i.t.a. - the three objectives are distinct.

(i) To take from the objectives of the S.S.S. and S.S.A. that part which is of help to learning literacy. After all, the value of the alphabet lies in the learning stages, not in the using stages. Even the Chinese with no alphabet find ideograms, once they have learned them, of equal use, and are just as able to read and write as anyone using an alphabet. The outcome of this acceptance of a new and much more limited and attainable objective has been the development of i.t.a. for those who already speak English, and World i.t.a. for those who need to learn to listen and speak English as well as read and write it.

(ii) To reject that part of the objectives of the S.S.S. and S.S.A. which sought to impose a less difficult, but nevertheless new, orthography upon the child when learning to spell, and to adopt instead a new objective - one to substitute freedom in place of conformity, and to put forward as the *only* requirement of spelling that it should be easily understood by any reader. Such a new freedom in spelling would greatly reduce the time wasted in learning to spell when the transition needs to be made from writing in i.t.a. to writing in T.O. I believe that this will lead to no change in the spelling of the most frequently recurring words (the first 500 cover as much as 75% of the words in any passage of continuous English and no worse than a tolerable diversity in the spellings of only some of the remaining 25%. This would mean, of course, no change in printed English - only in the writing and typewriting of those who write, non-professionally, those who in fact produce very little writing in the course of the year, much of which is ill spelled anyway.

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* I recommend to those who wish to understand more fully the essential difference between Shaw's new alphabet and Spelling Reform with the old Roman alphabets, - pp. 8-16 of *The Late Dr. Mont Follick - An Appraisal,* the reprint of The Inaugural Mont Follick Lecture at Manchester University on 7th February 1964; Also *Androcles and the Lion* (Shaw Alphabet Edition) Penguin Books Ltd. London 1962.

In the process of time at a school, and as children grow up and in the process read and write more and more, they will come to spell in the existing T.O. convention the very common words, and even most of the common words; while some of the less common and most of the unusual (and difficult) words, will be spelled wrongly - as they are now, but even more understandably than they are now by those who attempt what they would ordinarily evade.

This suggested new aspect of Spelling Reform, which would give the new generation a new freedom, would parallel the two older freedoms in linguistic communication. We do not exact from any one, young or old, a "copperplate hand", but are satisfied that the consideration of gaining readership will impose the necessary minimum discipline. We do not exact either, from those to whom we listen, a particular pronunciation. We may suppose that there is the Queen's (or the President's) English, but we deceive ourselves. Variety is infinite. There is no single standard to which to conform, and if there were, no one would conform. Alternative pronunciations, dialects and individual idiosyncrasies, combine to demonstrate that Ortho-epy does not exist, and that Ortho-graphy also might equally be dispensed with. After all, a conformity to neither Orthoepy nor Orthography would have no practical value which is not ensured by the discipline of intelligibility.*

(iii) To take over from Bernard Shaw the idea that it is desirable to design a new, and non-Romanic, alphabet for personal correspondence: one which will be significantly faster in handwriting than our present medium, but not as fast, nor as burdensome in learning, nor as aesthetically deterring, as the fast shorthand systems.

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* The choice before us is a nasty dilemma: either freedom to spell as we like, but as we know our reader will understand us; or a continuation of the grind of "learning to spell". Admittedly any new orthography which the beginner will thus need to learn will be a somewhat easier one, but a single standard of pronunciation will need to be established and *will need to be learned as of rote* as a basis for spelling - much as spelling is learned now. No-one in their wildest optimism can expect agreement on pronunciation. In any case the result of departing from the new standard T.O. will be a great proliferation of variant spellings corresponding with the variations in regional and individual pronunciations. If a symbol for the schwa is not provided, the guesses of the writer whether the *e* should be used as in *continent* and *continental*, the *a* as in *metal* and *metallic* will be widely variant, until we are back again to spelling bees, wondering whether there ought to be an *o* in accommodate, atom and obey. If we have a symbol for the schwa *the writer will need to* know *when* to use it in the weak forms of *that*, *for*, *would* and the final syllable of *Portsmouth* and when to use the strong form.

If variety is an inevitability why not make a virtue of the inevitable and allow it? The other course will need the imposition of a new rote learning, and one linked not to the universally acceptable convention of the past, but to some new rote which will be based upon pronunciations which will not be generally acceptable by all who will either stick to T.O. or will introduce the freedom and variety advocated above in all words of which they do not happen to know the spelling.

I have spoken at length about these three, and have digressed from my main theme, - but to have done so enables me better to have explained my position about No.(i) - the development of an Initial Teaching Alphabet - which, as I see it, will not only achieve that first objective point, but also pave the way for the other two objectives to be achieved, as achieved they ought to be, even if it be long after I and the youngest of my audience may have passed away.

But I must return to the main stream of my theme. When I accepted the invitation from the Chairman of the Bath Conservative Association, and a number of members of the Executive, to allow my name to be considered for adoption as the prospective Parliamentary candidate for that supposedly very safe Conservative seat, I had in mind that to become a Member of Parliament would not hinder, but could be made quite properly to help, what was, behind everything, my objective: similarly in accepting the position of Chairman of The Finance Committee of London University Institute of Education, I supposed that the position and contacts so established would inevitably, and again very properly, help that objective - assuming of course that the proposal to investigate the benefits of an initial teaching alphabet might be regarded as educationally sound.

The late Dr. G. B. Jeffery had been for some years a friend of mine. He was Director of The Institute, and he accepted in 1951 on behalf of the Institute, a grant of £2,100 (£300 a year for seven years) from the Simplified Spelling Society, which grant I had negotiated with him for an investigation using Simplified Spelling to ascertain "whether English-speaking children would more easily pass the barrier to complete literacy if they were to pass that barrier in a word symbolization which used the letters of the alphabet in a logical and wholly consistent appearance". (Ref. No. 1). Dr. William R. Lee was engaged, and he reported in 1957. His report* did little, if anything to advance the proposition that our traditional alphabets and spellings with them are a major handicap in learning to read and write the visual forms of a language already known in its auditory form, but it was helpful to have demonstrated that only by a direct trial of a new medium could judgment be formed and decisions taken.

Meanwhile the two Bills in the House of Commons - the Private Member's Bill of 11th March 1949, and The Simplified Spelling Bill of November 19th 1952, were two important date marks. The first, drafted by Dr. Follick, was defeated by only three votes; the second, drafted by me with the assistance of Mr. Maurice Liddell of Dyson Bell & Co. the well-known Parliamentary Counsel, was passed by a majority of 12 on the second Reading. Both were in the names of Dr. Follick and of other Members and myself. Dr. Follick conducted the first, and I - at his request - drafted and conducted the second.

The most convenient source for information on this is to be found in the above-mentioned paper - *The late Dr. Mont Follick: An Appraisal* - including particularly the copious notes at the end. The promise won from a very reluctant Minister of Education that: -

> "Any such organization could rely on my interest and good will for their proposal as for any proposal designed to investigate possible improvements in this field of education. Such interest and goodwill would not imply any prospect of additional grant. It would be for the organization concerned to secure the willing co-operation of local education authorities, teachers and parents, and

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* "Is the Irregularity with which English is Spelt an Important Cause of Reading Difficulty" (June 1957).

> these must in my view remain free to decide with what particular forms of research they wish to associate themselves. All concerned in any such researches could rest assured of my good wishes for their work."

was a step forward of the very greatest importance. It was indeed one of the essential foundation stones, and the most important for what was to follow. Here again that Paper is the most convenient source of information.

Meanwhile a long period for persuasion was necessary. The persuasion was two-fold: lecturing and discussing in what are now called Colleges of Education, and in education of the public at large through Public Relations.

A select band of us, of whom the present Speaker of The House of Commons, (Dr. Horace King), Sir Graham Savage [shortly before the Director of Education (Superintendent in America) of London], Peter MacCarthy (Head of the Department of Phonetics of Leeds University), Ralph Morley (M.P. for the Itchen Division of Southampton), Maurice Harrison (Director of Education for the City of Oldham), and myself were the most active.

We were all members of the Simplified Spelling Society, and all capable of dealing with the main point at issue: now that the Minister had blessed the project of trying an alternative alphabet and logical spellings, ought not the proposition to be tested in Schools on an experimental basis, or should the idea remain in the limbo? We invariably asked the audience to vote by a show of hands, and we even asked the audience to vote again whether they would allow a child of theirs to be a "guinea-pig".

The percentage voting in favour - on both questions was invariably in the nineties and eighties. Commendably few of the students "chickened-out" even in the second concrete and subjective vote, from their first objective and impersonal one.

The effect on the Principals and on the lecturing staff of such an overhwelming vote was impressive. If any University were to consider getting down to the hard practicalities of conducting the desired research, at least its higher staff could count on a not wholly unfavourable reaction from a number of colleagues in the higher ranks in education. Its effect on Her Majesty's Chief Inspector of Education (Mr. Percy Wilson) was of at least equal importance. He attended one of my lectures - that at the Maria Grey College in Twickenham - and his subsequent conviction that an initial teaching alphabet deserved a trial, was to have a decisive and practical consequence of very great importance, as will be seen later.

Moreover a steady stream even of embryo teachers entering the staff-rooms of schools all over Britain, and the still small voices of those who could claim to have at least considered the case for and against a research, would be of potential importance when the time came to seek volunteer schools and volunteer teachers for the experimental classes.

We knew the importance of this work, and looking back, it is clear that without this period of exposition no progress would have been possible later.

In the same way my meeting with Bernard Shaw, and the considerable correspondence which followed, led to happenings following his death without which progress would have been very much more difficult. The impact of his advocacy, the effect on the public of his Will and all that it led to, was of very great value in the education of the Press, the T.V. programmers and of the public.

Here again I must refer to that paper *The late Dr. Mont Follick.* I cannot do better than to quote from it a short passage which shows what Dr. Follick, Bernard Shaw and I* seem to have achieved:

" Firstly he had advertised through the English-speaking world, and indeed throughout non-English-speaking countries too, that the English language as presently printed with the old roman alphabet was no longer thought to be perfect and above improvement, even in its own home land. Secondly he had forced the Government, and the particular Minister most influential in English literate activities, to agree that the traditional conventions might be challenged to trial to justify their dominance in infant teaching at any rate, and to promise to give moral support to the act of challenge whenever it might be mounted. Thirdly he had in this paved the way for the eventual action by a major British University - the leading Institute of Education and the only body important enough to dare stage such a challenge and, having staged it, to dare to adjudicate the winner. He had thus carried the cause from the negative phase of decrying the old as being bad, to the positive one of introducing and testing a to-be-newly-created and better alternative.

Meanwhile, Bernard Shaw, who was alive during the first of Dr. Follick's Bills, had supported him, if with certain reservations. Moreover, Shaw's support after his (Shaw's) death was most effective, not only in his Will and in the bitter contesting of it, but also in the *de facto* victory on Appeal against the earlier adverse decision in the Lower Court. Shaw had thus been very active in supporting Follick's objective, particularly for that first stage of their objective, a stage in which they were wholly at one. Just as the earlier news that the British Parliament had voted in favour of a new spelling had made frontpage headlines in the British and overseas Press, so too, each of these three successive propaganda explosions of the dead, but still living, G.B.S. achieved, if possible, even bigger, better and wider world Press coverage, and discussion.

No one could any longer maintain that consideration of a new convention and a better medium was other than a lively one. It might be stupid, it might be a lot else besides, but it was very lively. Generally in the minds of all, responsible or not, influential or not, was an awareness that a new force had arisen, one no longer to be ridiculed and airily dismissed; they became aware of the advent of a new medium of communication, which might be seen, if no bigger than a man's hand rising as a cloud on the horizon, bringing with it the possibility of the new and the better. The uninfluential did not know how, or why, a new and better was thus on the horizon; the influential, virtually all, pre-judged the result of the challenge and were certain that the new would not be better - and reconciled themselves to the tiresome period of disturbance apparently necessary for proving them right. Meanwhile, let sleep be disturbed as little as possible, for after all what hope was there of finding any University, much less a major one, so bereft of its senses and so blind to the decencies of cultured communication, as to be willing, much less desirous, of setting up the lists for such a challenge and acting as the organizer of the challenge and as the judge? "

As we know, that next step was achieved.

The actual design of i.t.a. was a slow evolution. Although I was keen to have available on the table a concrete proposal, it was not until 1953 that Alfred Fairbank, one of the greatest calligraphers and most knowledgeable of experts in characterization, helped me with my first demonstrable exhibit.

* While modesty and regard for the memory of my late colleague led me to suppress in that memorial paper the leading and very active part which I had played, I need in this paper to ensure that the achievements here mentioned are recorded as the fruit of a collective effort by a number of people, among whom I had been the most active.

I had printed many thousands of copies of it on a foolscap sheet. The alphabet was on one side, and the opening verses of St. John, Chapter I, on the other - *ad satis* to exemplify all of the characters of the alphabet. This in practice meant a jump ahead as far as Chapter III to the word "measure" for the character for the sound *zhuh*. These sheets we gave away at our lectures at Colleges of Education and occasional Rotary Clubs. I suppose they will have a collectors' value.

It was only later than 1953 that the Monotype Corporation had sufficiently caught up on the back-log in alphabet design and production which the 1939-45 War had left behind.

Much discussion with Beatrice Warde decided upon Monotype Ehrhardt Series 453 as the best type-face around which to design type characters appropriate to the calligraphic characters which had been evolved for the then 19 augmentations. The decision turned in part on the all-round suitability of that type face, but more particularly on the availability of a semi-bold alphabet (series 573). Fairbank had accepted my insistence that the initial letters for sentences and proper names should differ only in size (or in degree of blackness), and not at all in shape, from their ordinary counterparts. I could not afford to have over 40 letters reduplicated in a larger (as well as the smaller) size. However a higher degree of blackness did not seem satisfactory. A "bold" character made the page too spotty, but a semi-bold character looked right enough, and enabled at any rate lip service to be paid to the convention of capitalization. It was only later, when the concept of i.t.a. had won my complete confidence, that I hazarded the cost of adding two more alphabets of over 40 characters each, a majescule ordinary, and a majescule semibold.

I toyed long and lovingly with the idea of basing the alphabets directly on the Fairbank original, and of cutting away from the generally accepted practice of printing from printer's type. An attractive consideration was that the characters for the child to read, and the ones which he would in fact write, could then correspond to a greater degree. However, friends with a more practical than idealistic attitude to practical problems advised me that I had enough on my plate to make it wiser to refrain from the effort to persuade traditionalist teachers not only on the philosophy of a new teaching medium, but also on a secondary issue that the whole of the alphabet should be graphic rather than imprinted.

Mr. C. N. Fellowes, and Mr. J. Goulding and Mr. D. H. J. Schenck of The Monotype Corporation, were patient and painstaking. My ideas had become crystallized by then, and there was little room for flexibility at that stage, but great need for their skill in making the "augmentations" aesthetically acceptable in themselves *and* acceptable to bedfellows with the then 23 retentions.

This is probably not the place, and there is too little time, to develop the rationale behind the final decisions for each of the now 24 retentions and now 20 augmentations. It must suffice to say that each decision and each consequent form had been very carefully weighed in the light of the very extensive knowledge and experience which a lifetime's up-bringing and a long period of gestation had stored up and brought to bear. Possibly the overbusyness of The Monotype Corporation during those post-war years, and the need to carry the Colleges of Education with us, were not without value.

Clearly I have only myself to blame that others do not appreciate what considerations have lain behind the choice of each character - and no choice can be considered on its own and apart from its relationship to each one of the 43 other choices. I believe, however, that my critics would have been well advised to consult me about my reasons before they had committed themselves

by advancing, as some have done, what seem to be proposals lacking either the degree of knowledge required for such criticism, or a sufficient sense of
ng responsibility. The suggestion has even been made that ~~ng~~ ( - mark you - not even *g*!) would be a better characterization than ŋ. Other suggestions have been made of an almost equally insufficiently appreciative nature.
Those who wish to make their own initial teaching alphabets are free to do so, but let them design for themselves, and not tinker with what has been designed *ad hoc* for its very special purpose, and stands or falls on its merits as a balanced whole.

The next step was the printing of *THE EHRHARDT AUGMENTED (40-Sound ----42-character) lower-case ROMAN ALPHABET: The reasons and intentions underlying its design together with a specimen* a 24-page pamphlet in which the now famous specimen passage appeared at the beginning: -

ŧhis iz printed in an augmented rœman alfabet

In its proof form it was to play a decisive and historic part.

In April 1959 there met, in a room in the House of Commons, a party of the six most important personages in British Education. They were: -

1. Sir William Alexander
2. Mr. Lionel Elvin
3. Sir Ronald Gould
4. Mr. Walter James
5. Dr. W. D. Wall
6. Mr. Percy Wilson

I displayed to them the specimens in the proof, and offered the undertaking that if the desired trial in Schools were to come about, it would be backed by the finance necessary both to carry out the research and to provide reading materials progressively through the stages of developing reading skills.

The question remained whether there could be enough teachers in schools who might be likely to volunteer themselves and their classes for a research project, if London University Institute of Education were to launch it.

The decision was then and there taken that the article which I had brought in proof form, with the first two paragraphs printed in A.R. (as i.t.a. was then called) should be printed in a coming issue of *The Times Educational Supplement.** That article contained an appeal to any teachers who might consider that the research was worth conducting and would be willing to participate actively, that they should write to me.

The rest of the story approaches the days when enough has already been written for there to be no need for me to take it further. I took round to The Director of London University Institute of Education a batch of letters from some thirty teachers, couched in terms which indicated not merely that the good-will was there, but that those who might decide to launch a research were secured from the criticism that an unacceptable - even if idealistic - fad was being foisted upon a profession which would have nothing of it.
*Per contra,* the implication from the letters was one of a duty to ascertain whether major progress in the teaching of reading would or would not eventuate.

The real work was about to begin. Once the University had decided its course of action and the financial ends had been agreed and settled, action was planned and action taken. I drafted and had printed for approval the little 12-page leaflet setting out the reasons why the University of London Institute of Education, in association with The National Foundation for Educational Research in England and Wales, was initiating an investigation into the early

* Times Educational Supplement, 29th May 1959.

stages of learning to read in a new medium.(2) Advertisements were inserted, applicants interviewed, and everything possible done to win public, and above all parental and teacher, support. My paper to the Royal Society of Arts in November 1960(3) was an important move in winning the sympathy towards the idea of a trial of my alphabet and spelling. Then and for many years after, that paper has influenced not only educators but the public generally. At all costs the "guinea-pig" element had to be exorcised. The British Press and Television could not have been more sympathetic and helpful - and they and the public not a little intrigued.

When Mr. John Downing took up his duties on 1st October, 1960 he faced a formidable task in obtaining volunteer head teachers. Here the support of Her Majesty's Chief Inspector, Mr. Percy Wilson, of his Minister then Sir David Eccles, of Sir William Alexander and of Sir Ronald Gould, were determining factors. So, too, was the support of Mr. Lionel Elvin and of Dr. W. D. Wall. Their part deserves the greatest commendation, since London University's Institute of Education and the National Foundation for Educational Research in England and Wales are so outstandingly the most appropriate and most respected institutions for carrying out such a research in Britain.

Such has been the spread of i.t.a. since September 1961 that it comes as a healthy reminder that there could be as few as 20 pioneer schools in 1961 - at the same time a measure of the great difficulties of educational research in this highly emotional field and a compliment to those, by whose influence and hard work what might be said to have been a near-miracle was achieved.

Finally a little bouquet to the firm of Sir Isaac Pitman & Sons Ltd., without whose money, and above all without whose personnel and organization, all that has been accomplished would not have taken place. The experience, knowledge and skill in terms of a loyal manpower deployed, however thinly, across the whole of the English-speaking world, was an essential factor in success, and a priceless asset for ensuring that the success was not parochial but as widely distributed as T.O.

There was a vicious circle - one almost impossible to cut. However much I might "sell" the idea of trying a simpler alphabet and spellings and win support from teachers, I was "as one beating the air". "Where were the books?" However much I might talk to publishers about the importance of a research and the consequent need for books, I was as one beating even thinner air. "How many schools are using the alphabet - or likely to use it?"

It was a great help that I was Managing Director and Chairman of the Board of a publishing firm, albeit one which neither in Britain nor in America or elsewhere had any standing in Infant Education. Nevertheless a position is not everything. Loyalty and support are a *sine qua non*. The cool courage and apparently reckless daring and disregard of ordinary commercial caution, particularly of those in the New York house, demands a very warm tribute. Those who cut the vicious circle stood out among the whole publishing profession. No other publisher would risk even a penny in those early and crucial days on such a bizarre and idealistic project. It was hard work to persuade other publishers even to agree to their books being transliterated and printed, and even when agreement was obtained, it had to be on the basis that the full cost of all unsold copies would be recoupable.

Insinuations have been not infrequent that i.t.a. has been undertaken as a commercial racket. If so, from my grandfather in 1842 to modern times there have been so great, so many, and so long expensive losses that there must have been a singular lack of commercial judgment - and for over a century. If it should be that some of the hundreds of thousands of pounds, or even on balance in the future, some profit were to return to those who have had an ideal and a faith surpassing commerce, I for one would rejoice in the *ex post facto* evidence of a higher justice, which determined that the loss should be diminished and even reversed.

For my own personal part, I have often wished that I had been not a publisher but, say, a brewer with a hobby and the means to follow it. I have always returned to offer thanks that I have been what I was, someone deeply imbued with a sense of educational vocation, and that I had become experienced in just what was needed for the tasks in hand. I am glad, too, that my educational experience was not in the infant school, but in the linguistic subjects of Shorthand and Typewriting. Had I been an infant teacher, I would have accepted and stood by the generally accepted dogmas and never thought to question them. Shorthand and indeed Typewriting are essentially linguistic subjects, and it has been as obvious to me in infant reading as it has been in shorthand transcription, that the linguistic competence of the reader or the transcriber is at least as important a part of success as any technical skill.

I believe that for the future the great contribution of i.t.a. is going to be in high-lighting the importance of the language skill, in listening, speaking, reading and writing, and in leading the way to teaching policies and techniques in which the deliberate teaching of language is the objective, and the media and mechanisms no more than the tools by which to achieve the objective.

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## 3. I.T.A. -- NOT SPELLING REFORM, BUT CHILD AND PARENT OF SPELLING REFORM

Godfrey Dewey
Proceedings of the Fourth International i.t.a. Conference
McGill University
Montreal, Canada

### PREFACE

Because of my association with simpler spelling and spelling reform for some 60 years, actively for the past 45 years, and with Sir James Pitman in that and other common interests for more than 30 years, I have been asked to supply some background and perspective, possibly looking forward as well as back, for the present profoundly important progress of i.t.a. I do this gladly, altho to survey so large a topic as English spelling and spelling reform involves a high degree of selectivity and condensation, compressing into a sentence or a paragraph topics which would warrant a separate essay or book, and have, in fact, been dealt with in innumeralbe articles and many books. My justification for this over-simplification must be the effort to give a conspectus of a field little known to the present generation, much of the material on which is relatively inaccessible. Such aspects of the situation as represent my own conclusions from the premises, I have tried to present briefly but clearly.

I am indebted to many sources, first and foremost to my father, Melvil Dewey -- better known for his Decimal Classification, used in the overwhelming majority of American libraries and in more than 100 countries thruout the world -- who was largely responsible for the founding of both of the two chief spelling reform organizations in this country: The Spelling Reform Association in 1876, which commanded the support of many of the foremost philologists and lexicographers of that period, and the Simplified Spelling Board, to which Andrew Carnegie gave over $250,000 between 1906 and 1919; both merged in 1945 to form the present Simpler Spelling Association. Also, I am greatly indebted to Dr. Ben D. Wood, whose invaluable services to i.t.a. in this country are well known, for his insistence and assistance in this contribution; to Dr. Abraham Tauber for references from his unpublished doctoral thesis, *Spelling Reform in the United States*, to be published shortly by the Philosophical Library;, and to the Grant Foundation for important financial support of various undertakings directly relevant to the development of i.t.a.

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A Principls of '76 (American Philological Association)

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## INTRODUCTION

The Initial Teaching Alphabet (i.t.a.), as Sir James Pitman has rightly emphasized from the beginning (39) is *not* spelling reform. Those very features, both of symbol forms and spelling rules, which make it a better initial teaching medium (i.t.m.) than any other heretofore devised, would rightly be adjudged detrimental in a spelling reform notation. If, however, there were no need of spelling reform, there would be no need for i.t.a., and most previous efforts in this field have been by spelling reformers. Conversely, were it not for i.t.a., the prospects for eventual reform of English spelling would be far less bright; for general adoption of i.t.a. as the first stage of learning to read and write will produce in due course an adult generation measurably familiar with the number and nature of the sounds of their own language, as the present generation emphatically are not, and aware also of the added burden which our archaic traditional orthography (T.O.) imposes on simple phonemic writing. Under such conditions, most of the obstacles which have held back spelling reform for the past 400 years would virtually disappear.

To see the present i.t.a. program in perspective, I propose to outline, very briefly, the evolution of English spelling and the state which it has reached; the long history of efforts for reform; and some of the previous examples of using a phonemic notation as an initial teaching medium (i.t.m.), which proved uniformly successful but did not survive. From that past we may, I hope, gain a clearer view of the present and perhaps a glimpse of the future.

## ENGLISH SPELLING

The fundamental cause of our present chaotic and indefensible spelling, underlying all the rest, has been the effort to spell a cosmopolitan language, basically Anglo-Saxon or Teutonic, but greatly enriched from Romance sources, notably Norman-French, which distinguishes about 40 sounds, by means of a Roman alphabet, quite adequate for Latin, for which it was developed, but containing a maximum of 26 letters. In fact, during much of the formative period this alphabet contained only 22 letters, lacking distinction of j from i, of k from c, of v from u, and the character w. Sir James has given us, two years ago a most interesting as well as scholarly account of the evolution of the Roman alphabet, both upper case and lower case, and of the forces which led to abandonment, even before the impact of printing, of the Anglo-Saxon characters which might have saved the day (38). I shall confine myself here to summarizing the more important secondary factors which have contributed to the evolution of the spellings with which we are burdened today.

The early scribes struggled valiantly, but individualistically, lacking any unifying authority, with the problem of expressing alphabetically -- so far as might be, phonetically -- some 40 sounds with only 20-odd characters, but their difficulties led Chaucer to lament in Troilus and Criseyde:

> And for ther is so grete dyversite
> in Englissh, and in writyng of our tonge,
> So preye I God, that non myswrite the,
> Ne the mysmetere, for defaut of tonge. (5)

The advent of printing developed gradually, but somewhat prematurely, while the evolutionary process was still going on, a demand for uniformity, at the same time that it introduced new problems of its own. Many of Caxton's and other early printers were foreigners, especially Dutch, relatively unfamiliar with English, who tended to solve spelling problems, when they recognized them, according to the canons of their own language. Furthermore, until well into the 16th century, the practice persisted of justifying lines (straightening the right-hand margin) by adding extra letters, rather than spaces; most often a final e.

Publication of the King James Bible in 1611 exerted a powerful influence toward investing with a certain authority the relatively consistent spellings which it employed, and to that extent tended to slow down the natural process of attempting to conform to those changes in pronunciation which are an inevitable phenomenon of the life and growth of any language. When to this influence was added the ponderous prestige of Johnson's dictionary, appearing in 1755, it may fairly be said that *rigor mortis* had set it, and that a dead spelling had ceased the attempt to represent faithfully a living language.

Between these dates, one other significant force had entered in to pollute the well of English undefiled. The scholars and pedants who, inspired by the Renaissance, delighted to trace all good things back to classical sources, had devoted some scholarship and more pseudo-scholarship to discovering classical etymologies for English words, and attempting to signalize these in current English spellings. To them we owe such spellings as *comptroller, debt, delight, doubt, foreign, island, sovereign*, etc., which in each case conceal the true derivation.

Such further slight changes as have occurred in the last two centuries, including the divergencies between British and American usage for which Noah Webster was chiefly responsible, will be better dealt with under the heading of spelling reform.

What now are the characteristics of our present T.O., which have produced the urgent demand which i.t.a. has been created to supply?

An ideal spelling would be phonemic rather than phonetic; that is, making only those distinctions between sounds which are semantically significant and which are readily recognizable by the untrained ear. On this phonemic basis, it would have one and only one symbol (grapheme) for each sound (phoneme) and, allowing for regional differences in pronunciation, would have one and only one sound for each symbol. What in fact, do we find?

*English heterografy* lists, for the 41 sounds distinguished by the Simpler Spelling Association Fonetic Alfabet (41) -- the 40 sounds of i.t.a. plus schwa -- 507 different spellings, an average of 12.4 spellings per sound (8). Ellis (17), indeed, identified more than 600 spellings , but he defined a spelling somewhat differently and included proper names, whereas *English heterografy* confines itself to the 70,000 words in one abridged dictionary, excluding proper names (7). Conversely, *English heterografy*, rearranging the data given above, finds a total of 262 different spellings or an average of 1.9 pronunciations per spelling (9).

The monumental study of English spellings by Hanna, *et al.* (19) just published, analyzes exhaustively, using computer techniques, every phoneme of 17,000 common words, derived chiefly from the Thorndike-Lorge count of 15 million running words; taking into account the position of the phoneme (initial, medial, or final) in the syllable, and the degree of stress (primary, secondary, or none). The study depended on *Merriam-Webster's New Collegiate Dictionary*, 6th edition, as its authority for pronunciations, but reduced the 62 phonemes there distinguished to 52 -- which is, of course, still too many. On this basis, the study found, for these common words, 334 different spellings (cf. 507 above) of these 52 phonemes, requiring 170-odd different graphemes (cf. 262 above); almost precisely the 1.9 ratio of pronunciations to spellings noted above. Altho this analysis was performed on a dictionary basis, disregarding frequency of occurrence except for a half dozen code numbers for broad groups, the one figure which is comparable, the proportion of consonant phonemes, 62.10%, to vowel phonemes, 37.90% (20), strikingly confirms the validity of Dewey's earlier work (11).

Using these data and taking into account further so-called environmental factors, and the morphological factors of compounding, affixation, and word families, the study then constructed an algorithm or rule of procedure, which manipulated 77 different graphemes according to 203 rules. A computer programmed according to this algorithm was able to spell just under 50% of the investigated 17,000 words correctly, and another 36% with only one error! I can think of no better or more objective measure of the burden which spelling reform seeks to lift from education -- the task to which i.t.a. addresses itself till that happy day arrives -- than the foregoing figures.

From such analyses, it is quite obvious that most of the vast volume of research on spelling and the teaching of spelling, during the past 50 years, has been dealing with symptoms, not with the disease, and resembles nothing so much as efforts to build a modern emergency hospital at a grade crossing, instead of eliminating the crossing. Furthermore, the various reading methods which have battled each other with varying fortunes over the past century are revealed as chiefly efforts to rationalize the irrational; to sweep the difficulties of English spelling under the rug, where they bulk too large to be disposed of in so summary a fashion. Confirmation of this fact is found in the experience with languages such as Italian or Spanish, the spelling of which is almost completely phonetic. Especially pertinent is the experience of Wales, which has the bilingual problem of Welsh, in which the written language is, believe it or not, almost purely phonetic, and English. Harrison (27), (28) queried a number of teachers, principals, and inspectors in these bilingual Welsh schools and obtained unanimous testimony that whatever method was employed for the teaching of English, the question of anything but a simple phonic approach to Welsh simply did not arise.

## SPELLING REFORM

Efforts at reforming English spelling are practically coeval with the birth of modern English, commonly taken as the beginning of the 16th century.

Among several reformers, who published proposals during that century, John Hart, writing in 1554 and again in 1570, when he published "A Method of Comfortable Beginning for All Unlearned, Whereby They May Bee Taught to Read", was the first to emphasize spelling reform as an aid to learning to read (46). Does that sound fairly modern? Likewise, William Bullokar, who published about 1580, four books in his "amended" spelling, made the point that for "easy conference" the new orthography must not differ too much from the old. (47). What price compatibility, except for the name.

The well-meant efforts of the 17th and 18th centuries need not concern us particularly now. The great event of that period was the paralyzing effect, already referred to, of Johnson's Dictionary (31), which was an effort, not at reform but at standardization, which not merely stopped the clock but even set it back a bit. Tauber (48) gives an interestingly informative review of Dr. Johnson's attitude, from which I quote two fragments from the preface to the Dictionary:

> I have attempted few alterations, and among those few, perhaps the greatest part is from modern to ancient practice.
>
> I hope that I may be allowed to recommend to those whose thoughts have been, perhaps, employed too anxiously on verbal singularities, not to disturb upon narrow views or for minute propriety, the orthography of their fathers... Much less ought our written language to comply with the corruptions of oral utterance ...

One significant event of this 17th and 18th century period, preceding the 19th century association of shorthand and spelling reform thru Isaac Pitman, was the predominant influence of shorthand in favor of writing by sound rather than by spelling. Here, because the written characters differed completely from the Roman alphabet, there was no visual prejudice in favor of familiar letter combinations, and the obvious advantages of writing phonetically prevailed. Indeed, the very first alphabetic or workable shorthand system, that of John Willis, published anonymously in 1602, expressly stated that "in this Art, not the orthographie, but the sound of the word is respected". (13). The same instructions, in varying form and degree, appear in the great majority of the 210 systems of shorthand published during the next 235 years, prior to Isaac Pitman's Stenographic Sound-Hand in 1837. As early as 1766, we find Holdsworth and Aldridge taking for granted without argument, in their very definition of shorthand, strict writing by sound, and proceeding to give a clear, full, and essentially accurate account of the minimum 40 sounds recognized from that day to this as essential, and their relations to each other.

With Isaac Pitman, the historical connection between spelling reform and shorthand may be said to have reached its culmination. Thruout his life, Isaac Pitman was active as a militant spelling reformer, and spent the greater part of the large revenue from his shorthand publications on spelling reform experiments and propaganda. As early as 1843, he supplemented his *Fonografic Journal* with the *Fonotipic Journal*, and enunciated the proposition that "As Fonografy becomes the general medium of written communication, Fonotipic printing must follow ... We shall, therefore, advocate Fonografy as a means for the attainment of the great need -- Fonotipic Printing". Indeed, we are told by Baker (1): "From this time, he regarded his system of shorthand chiefly as an introduction to spelling reform; and to the advocacy of a phonetic notation, he devoted the strenuous efforts of a lifetime and his own means without stint, while he had also the moral and pecuniary support of a large number of adherents in all parts of the country."

The unceasing efforts by Sir Isaac Pitman, from 1843 until his death in 1897, including his active collaboration with Alexander J. Ellis from 1843 to 1856, are the chief landmark of English spelling reform in Great Britain in the 19th century, and his Phonotypy is one of the acknowledged parents of his grandson's i.t.a. Harrison (21) gives an interesting account of his efforts, including Ellis's tribute to him as "The Father of English Phonetic Spelling". It is interesting to note that in the years following their active collaboration, Ellis moved step by step toward a no-new-letter notation, publishing in 1870 his *Glossic*, in which "combinations rather than separate letters have definite sounds" (58); followed in 1880 by his *Dimidium Spelling, or Haaf ov Whot is Needed* (59), which admitted various alternative spellings in the effort to increase its compatibility with T.O. Glossic may justly be considered as the prototpye of the *New Spelling* of the Simplified Spelling Society, which may be regarded as the other parent of i.t.a., since the ligatured symbols of i.t.a. derive almost entirely from the digraphs of *New Spelling*. No less interesting is the little-known final spelling reform publication of Sir Isaac Pitman, "The Speler", published January 1895, which employed no new letters, and almost no diacritics (60).

In the United States, the first notable effort was Benjamin Franklin's "A Scheme for a New Alphabet and a Reformed Mode of Spelling", devised in 1768, but not published till 1779; best known thru his "Letter to Miss Stevenson", written in 1768, and later published in the Appendix to Noah Webster's "Dissertation on the English Language" (49).

Tauber (50) describes Noah Webster's first meeting with Benjamin Franklin in 1786 and reviews at some length the influence of Webster on American spelling, which, ironically, in view of the tremendous influence of his spelling books, was largely on the side of orthodoxy.

The first serious and sustained effort in the United States was undoubtedly that of Stephen Pearl Andrews, who brought back from London in 1843 some of Isaac Pitman's books and pamphlets on Phonography and Phonotypy, and published in 1844 the first American instruction book on Pitman's Phonography, and in 1846 the *First Book of Andrews and Boyle's Series of Phonotypic Readers*. This was six years before Isaac Pitman's brother, Benn Pitman, removed to America, and undoubtedly helped to stimulate the series of teaching experiments in the New England area, later referred to. Andrews' crusading zeal continued thruout a long lifetime, but the considerable success of the Andrews and Boyle shorthand publications was not paralleled by the spelling reform aspect.

In 1859, Zalmon Richards, the first president of what is now the National Education Association, aroused considerable interest by a report of impressive results from teaching reading with a phonetic alphabet, as far back as 1844; and committees were appointed and reported for several years (51). Other early supporters of spelling reform at the N.E.A. included Horace Mann and President F.A.P. Bernard of Columbia College.

The highwater mark of organized spelling reform in the United States was reached in a dozen years from 1874 to 1886, under the leadership of the American Philological Association. In 1874, the president, Professor Francis A. March of Lafayette College, made a vigorous attack on what he called, "The monstrous spelling of the English language" and its impact on education. This was followed up no less vigorously in 1875 by his successor as president, Professor J. Hammond Trumbull of Yale College, which resulted in the formation of a distinguished committee, headed by the first president of the Association, Professor William Dwight Whitey of Yale College, whose report next year, known as the "Principls of '76" (Appendix A) has lost nothing of its validity in the ensuing 91 years. This was followed, in 1877, by a proposed Standard Phonetic Alphabet, so soundly conceived that it served, a generation later, with insignificant alteration of fundamentals, as the basis for the Revised Scientific Alphabet, commonly known as the N.E.A. Alphabet, developed between 1904 and 1911, by joint committees of the American Philological Association, Modern Language Association and National Education Association, and used as Key 1 of the Funk & Wagnalls New Standard Dictionary. A series of annual reports followed, dealing with various rules and recommendations, culminating in 1886 in a list of some 3500 amended spellings (involving no new letters), recommended jointly by the Philological Society of London and the American Philological Association. The classic history of this whole period is that of March (32), prepared at the request of the United States Commissioner of Education, William T. Harris, and published in 1893.

During this same period, an International Convention for the Amendment of English Orthography was held in Philadelphia in 1876, in conjunction with the Centennial Exposition, with the President of the American Philological Association, Professor S. S. Haldeman of the University of Pennsylvania, presiding and Melvil Dewey as Secretary. The Convention resolved itself into a permanent organization, the Spelling Reform Association, which elected Francis A. March as President and Melvil Dewey as Secretary, and which commanded the support of a distinguished group of scholars, including many of those active in the A.P.A. During the next decade, the S.R.A. supported, supplemented and encouraged, so far as limited financial resources would permit, the spelling reform efforts of the A.P.A. The chief surviving record of its activities during this early period is found in the bulletins compiled and published by Vickroy (55) in 1881.

In 1887 on the initiative of Dewey, the S.R.A. undertook publication of an official organ, *Spelling*, which recorded and, in fact, constituted the chief activity of the succeeding period. The difficulties under which it labored are expressed in these few lines from the first editorial:

> It is wel known that reformatory jurnals have "no money in them." This jurnal is begun and wil be carried on for a reasonable time, in the hope that the friends of reform and the public wil find it useful, and wil giv a sufficient support. If, after a reasonable time, it is not supported, it wil die; for we reserv the privilege of acknowledging, should occasion arize, the powerful logic of a big printer's bil in a litl tresury. We make no promises and no predictions. (43)

Four issues were published during 1887, five more between 1892 and 1894, before the pressure of Dewey's multifarious activities in the fields of librarianship and higher education, as well as the lack of financial support, resulted in its discontinuance. Largely on my initiative, the publication was revived for a year, as a quarterly, in a different format, published jointly by the Simplified Spelling Society (of Great Britain), the Simplified Spelling Board, and the Spelling Reform Association, in 1925, and again in 1931, but that story belongs to another era (44).

Between 1886 and 1906, the chief field of effort shifted to the National Education Association, with the driving force coming increasingly from E.O. Vaile of Chicago, a dedicated, indefatigable, and undiscourageable spelling reformer, albeit handicapped by an irascible disposition. The most important achievements of that period, to which Tauber devotes considerable space (52), were the adoption in 1898, as an entering wedge, of the famous N.E.A. 12 words,

tho
altho
thru
thruout
thoro
thorofare
program
catalog
decalog
demagog
pedagog
prolog

some of which have since established themselves as preferred usage; and the appointment in 1904, with Vaile as chairman, of the committee which took the lead in developing the Revised Scientific Alphabet (N.E.A. Alphabet), previously referred to. This latter effort was expressly *not* spelling reform, but its proponents rightly believed that adoption of a rational, phonetic notation as a key to pronunciation in dictionaries and textbooks would go far toward paving the way for future spelling reform -- a parallel, on a less directly influential scale, to the potential effectiveness of i.t.a. as the parent of future spelling reform. Vaile also published (53) a compilation of the most important evidence and arguments of the 19th century spelling reform movement, including Max Muller's notable paper, *On Spelling* (35).

The chief event of early 20th century spelling reform was the formation in 1906 of the Simplified Spelling Board, and its activities during the period that funds were available. Andrew Carnegie had promised $10,000 a year for 10 years to encourage the formation of the Board, and actually gave them $260,000 within 14 years, but the funds were personal subventions, not endowment, and lapsed with his death in 1919; for the Carnegie Corporation, for whatever reasons, refused its support, altho Mr. Carnegie had told Melvil Dewey the last time they met that he considered the movement one of his most worth-while benefactions. The Board consisted of 50 front-rank scholars and educators, as well as men of letters and men of affairs, with an Advisory Council of some 250 members, also of recognized status or influence in those fields. Its first widely publicized effort was the "List of Common Words Spelled in Two or More Ways", the famous "300 Words",which President Theodore Roosevelt, a member of the Board, directed the public printer to use, and then had to back down under pressure from Congress and confine his usage to White House correspondence. Other lists of recommended words and rules followed, the final dictionary list including some 6,000 words. By means of two or three field workers and a substantial body of publications, including 26 circulars and the Simplified Spelling Bulletin, published quarterly beginning in 1909, the Board enlisted substantial support for a moderate degree of simplification. This included, at one time, 460 universities, colleges and normal schools, which agreed to use some degree of simpler spellings officially and/or to permit their students to use them; 556 newspapers and periodicals, circulating more than 18 million copies, using the N.E.A. 12 words and most of the 300 words; and some 40,000 individual signers of a postal card pledge to use some degree of simpler spelling in their own writing. The final step of the Board's active period was publication of the 1920 Handbook (36), which exhausted the Carnegie funds which had been their chief support. The members of the Board and Council retained their interest and their convictions, but as a group were in no position to provide funds for an active program, so the effect on the public was that the movement had collapsed. Thereafter, the Board continued to operate chiefly on its previously acquired momentum, with occasional unsubsidized meetings to plan and hope.

During this period, partly to avoid confusing the public, the Spelling Reform Association had purposely remained completely inactive. The Board, however, had of necessity, at Mr. Carnegie's insistence, confined its recommendations to limited piecemeal simplifications, eschewing any radical phonetic reform, with or without new letters. When, therefore, the Carnegie support and influence ceased, the most active reformers (mostly members of the Board) reactivated the Spelling Reform Association, in name at least, as a vehicle for more thorogoing reform, and published in 1930 the S.R.A. Fonetic Alfabet, which later became with very slight alterations, the present S.S.A. Fonetic Alfabet (Appendix B), which thus derives directly from the original 1877 A.P.A. Standard Fonetic Alfabet, thru the 1911 N.E.A. Revised Scientific Alphabet, and a further simplification thereof as a key alphabet proposed by the Simplified Spelling Board in 1922.

Meantime, in Great Britain, the British Simplified Spelling Society had been formed in 1908, with the aid of a modest grant from Mr. Carnegie and with a roster including many of the most distinguished linguistic scholars of Great Britain; and had published in 1910 the first edition of the *PROPOSALS FOR SIMPLIFYING THE SPELLING OF ENGLISH* (26) which became in due course the present *New Spelling* (40) of that organization, from which the ligatured characters of i.t.a. chiefly derive. This evolution was substantially furthered by a conference in London in 1930, for which I was chiefly responsible, between representatives of the Simplified Spelling Society and the Anglic Association, founded by Professor R. E. Zachrisson of Uppsala University (61). The mutually beneficial results of that conference were embodied in due course in the 5th and 6th editions of New Spelling, the successor of the original Proposals, and received the blessing of the Simplified Spelling Board, which was all that I could offer under the restricted policies still in effect at that time.

The final stage, up till now, of the organized spelling reform movement in this country, was the merger in 1946 of the Spelling Reform Association, dating from 1876, and the Simplified Spelling Board, dating from 1906, to form the present Simpler Spelling Association, with a declared purpose broad enough to include all approaches to the spelling reform problem. Their first and most important action was to promulgate World English Spelling (WES), a no-new-letter phonemic notation, following closely the British *New Spelling*, with only five minor variations, all of which were later ironed out at a conference in London in 1955. This move at once shifted the emphasis from the two extremes, the piecemeal recommendations of the S.S.B. or the whole hog phonetic alphabet of the S.R.A., to the middle ground of substantially phonemic writing with no new letters, toward which both Pitman and Ellis had moved; the ground consistently occupied by the S.S.S. from the beginning. Right now, negotiations with the S.S.S. are in progress to incorporate, hopefully in both notations, a few slight further concessions from accurately phonemic writing, in the light of i.t.a. experience, to raise to an even higher degree their compatibility with T.O.

As with our brief examination of English spelling, let us turn now from history to brief analysis and appraisal of spelling reform. The arguments in its favor fall into three main categories:

1) Economy of time and effort and money, now wasted in the writing and printing of superfluous letters. This was the chief argument which Shaw deemed worthy of serious consideration (45), yet in terms of social and economic values, I regard it as the least of the three, altho it is true that the possible saving of 1 letter in 6 by a one-sign, one-sound phonetic alphabet (12), now runs well into billions of dollars. Incidentally, the more immediately practicable type of reform, such as World English Spelling, using no new letters, actually effects no saving of letters, since the systematically used digraphs offset the elimination of silent letters.

2) Facilitating the spread of English as the dominant international auxiliary language, or second language, of the world. The superior fitness of English for this task, except for its spelling, has been well recognized for a century or more; first clearly formulated, perhaps by the eminent German philologist, Jakob Grimm (54). That theme has been ably developed two years ago, by Block (3). A much briefer summary of the case for English, especially as compared with artificial languages, appears in the International Language Review (10).

3) The effect on elementary education, and thru education on juvenile delinquency, adult illiteracy and unemployability, and on the human misery as well as social and economic evils, which those involve. This of course is the field to which i.t.a. addresses itself, and while i.t.a. is neither spelling reform nor a suitable spelling reform notation (39), some idea of the values at stake may be gained from the best results thus far achieved. Imagine, if you please, the still better results which will be achieved as further research develops new methods to take fullest advantage of the potentialities of the medium, and then imagine that when the time for the transition is reached, there is no transition -- the job is done.

Most of the hoary arguments against spelling reform -- loss of etymologies, confusion of homonyms (more accurately, homophones), necessity for reprint-ing existing books, lack of a standard of pronunciation, etc, -- all minutely analyzed and rejected by the most competent philologists and linguists before most of us were born, are rarely heard today, but for those interested, they will be found, with appropriate comments and quotations in Appendix C.

The real obstacles, which effectively preclude any hope of changing the spelling habits of the present adult generation, include:

Unawareness by most of those who have learned to read and to spell (passably, at least) of how heavily the burden of T.O. bears on today's school child;

An almost total lack of awareness of the number and nature of the sounds of their own language;

Total lack of experience (except for shorthand writers) in writing English phonemically in any notation;

Lack of agreement among reformers as to exact details of a notation sufficiently compatible with T.O. to bridge the necessary transition period of use concurrently with T.O. -- an aspect to which, over the years, I have given considerable attention;

Unavoidable distraction from the substance of any written communication to its form, during the transition period.

All of these are, of course, inevitably reinforced by the inertia which dreads the effort of the change.

It should be obvious how largely most of these obstacles would be resolved for a generation which had arrived at its competence in T.O. thru the medium of i.t.a.

As my primary topic is i.t.a., not English spelling or spelling reform, I forbear to discuss at any length the various solutions offered by the spelling reformers. Their name is legion, but they fall naturally into three general categories, briefly described in a current S.S.A. folder (2).

At one extreme is the piecemeal approach, to which the S.S.B. committed itself; lists of particular words, guided by a few general rules, but with no underlying phonemic code. This solution falls of its own weight because it yields no return in economy or consistency comparable to the effort involved.

At the other extreme lies the ideal solution which the S.R.A. espoused: a simple one-sign, one-sound phonemic alphabet created by *supplementing* - (not *supplanting*) the Roman alphabet, by assigning to each existing letter a single fixed value consistent with present usage, and creating some 20 more or less, new characters, in harmony with the canons of design of the lowercase Roman alphabet and suggesting, to a degree, familiar T.O. representations of the sounds to which they are assigned. This is, indeed, an ideal solution, and would have immediate practical use, to a limited extent, as a key to pronunciation in dictionaries and textbooks; but even with complete agreement on a particular form, any general adoption, such as would yield the huge savings previously referred to, lies generations in the future, because of the equally enormous practical problems of providing the necessary new characters in hundreds of typefaces, each in several sizes, in 10,000 printing establishments and, with drastically rearranged keyboards, on 10 million typewriters.

Between these two extremes, lies the middle way, consistently maintained by the S.S.S. from its inception and supported by the S.S.A. as the most immediately practicable solution: substantially phonemic writing, within the limitations of the universally available Roman alphabet, by *standardizing* it; assigning to each single letter the single sound most consistent with its T.O. usage, and selecting from T.O. practice, or creating in harmony with T.O. analogies, a sufficient number of digraphs, each restricted to a single sound, to provide for the 40-odd sounds to be distinguished. The problem of representing, with a minimum departure from T.O., the vowel sounds in unstressed syllables, makes this solution more difficult than at first appears, but over a period of 60 years, *New Spelling* and WES have brought this solution about as close to the most acceptable balance between fully phonemic writing and compatibility as seems practicable. Certainly this solution offers the greatest possibility for evolving naturally, as Shaw expressed it in proposing a quite different scheme, for which it would have been quite impracticable, "side by side with the present lettering until the better ousts the worse".

For a fuller discussion of these alternatives, see Appendix D.

## SPELLING REFORM NOTATIONS AS INITIAL TEACHING MEDIA

As already pointed out, spelling reformers as far back as the 16th century linked their proposals to ease of learning to read. It is not, however, until the 19th century efforts of Isaac Pitman and his disciples, including, in the United States, Stephen Pearl Andrews, and Isaac's brother, Benn Pitman, who carried the torch of phonotypy as well as phonography to the United States, that we find records of specific experiments and their results. Zachrisson (57) quotes, from the publications of Pitman and Ellis, reports of successful experiments in the 1840's, which undoubtedly influenced and encouraged his own undertaking in the 1930's, and Harrison (22) cites a number of favorable reports on experiments in Great Britain during the 1840's and the 1850's.

In the United States, the same period witnessed a number of experiments, chiefly in the New England area. Zalmon Richards, first president of the N.E.A., reported to them that in 1844 he had taught reading with a phonetic alphabet in one-fourth the time usually required (51). Experiments in and around Boston achieved results which elicited from Horace Mann, in 1851, a striking testimonial, quoted by Ellis:

> Dear Sir: Having witnessed the exercises of a class of nine children under your care in reading phonography, (or phonetic shorthand) and phonotypy, (or phonetic print) it gives me pleasure to assure you of the delight which their performance gave me. I think the nine Muses were never listened to by a more grateful audience...The children you exhibited had certainly made most wonderful proficiency, and were, in several of the essentials of good enunciation and reading, *years* in advance of most children who had been taught in the old way.
>
> Yours truly
>
> Horace Mann (15)

One important demonstration, investigated in some detail by Crockett (5), following up a brief mention by Ellis (16), occurred in Waltham, Massachusetts, from 1852 to 1860. The notation used was the Pitman-Ellis 1847 alphabet. The chairman of the School Committee which authorized the undertaking was Thomas Hill, later president of Harvard College, and their reports set forth in some detail the advantages of the program, and even went on to cite and refute the principal objections which were encountered. Much later, a committee report to the American Philosophical Society, in 1899, quoted by Harrison (23), referred to this Waltham experiment in some detail as being markedly successful. It is interesting and significant that this report, like many others of that period, emphasizes that the classes taught by the phonetic alphabet were consistently better spellers (in T.O., on current spelling lists) by a wide margin. At first glance, it is not immediately obvious why students who have first mastered a rational spelling and then changed to an irrational one, should spell better than those who have concentrated on the irrational one from the beginning, but the phenomenon occurs repeatedly. My own guess would be that in the course of the transition, the i.t.m. student becomes more or less consciously aware of some characteristics of the irregularities, whereas for the T.O. student, they remain just one inextricable confusion, like a heap of jackstraws.

One of the most significant 19th century experiments was that in the St. Louis schools, commencing in 1866, under School Superintendent William T. Harris, who later became United States Commissioner of Education. This used a modified alphabet of some 70-odd characters, devised by Dr. Edwin Leigh. The characters were a complex mixture of hairlines, boldface and modifying strokes, applied to the Roman alphabet; difficult or impossible to write, but exhibiting a very high degree of compatibility for reading. Harris, writing as U. S. Commissioner of Education, in his letter of transmittal of the 1893 Bureau of Education circular previously cited (34), singled out Leigh's experiment for special emphasis, implying that it was still continuing at that date. In the same letter, referring also to previous experiments from 1845 on, he stated:

> The average results have shown that about two years may be saved in learning to read by the phonetic method (33).

References may be found to a substantial number of other experiments, including in the 1870's both Boston and New York (24), but as with most or all of the 19th century experiments, the reports, altho uniformly favorable, often in extravagant terms, are too subjective to yield much information beyond that fact.

One 20th century effort, prior to i.t.a., deserves special attention because it was a half-brother, at least, to the i.t.a. child: a group of experiments in 16 British schools between 1915 and 1924, using the early form of what is now *New Spelling*. Harrison (25) points out that the materials available were almost unbelievably scanty: a *Ferst Reeder*, and transliterating T.O. materials on the blackboard for the first three experiments; with the addition only of a *Sekond Reeder* and *Jinglz and Storiz* later on. Nevertheless the results, as published by the Simplified Spelling Society (42), based on reports from teachers, headmasters or mistresses and inspectors, were uniformly favorable, in most cases enthusiastic. As with most reports of 19th century experiments, however, these were subjective judgments rather than quantative data which could be statistically manipulated. Nevertheless, the consensus was impressive. A special interest attaches to these experiments in that that were using a no-new-letter digraph notation, with no attempt to ligature or otherwise signalize the digraphs.

In the face of such uniformly impressive successes, why did none of these projects survive and take root? For one familiar with the problems of introducing an educational specialty, especially a revolutionary specialty, into the schools, the answers are not hard to find. For the revolution we are discussing, a phonemic notation as an initial teaching medium, here are the most important:

1) The inherent *prima facie* unreasonableness of the basic idea that to teach a child two complete systems of reading and writing, first, one which

he will not continue to use and then the one which he must use, will give better results more quickly than to teach the one he must use in the first place.

2) The natural fear that the transition to T.O. might prove confusing or ineffective; a fear which dies hard, even today, tho by now it should certainly be moribund.

3) Lack of standardized tests and objective measures to back up subjective and therefore controversial judgments.

4) Defects and deficiencies of the various media employed, which in most cases fell far short of the compatibility of i.t.a.

5) Lack of teachers adequately familiar with the phonetic facts of English, or means for training such teachers, once the original protagonist of each project dropped out of the picture.

6) Paucity of teaching materials, costly and difficult for any publisher to produce for a limited and highly problematic market. Only a strong publisher, moved by conviction as well as the tenuous hope of ultimate profit, could have hoped to take on and overcome successfully all the other obstacles involved.

7) The dead-weight pressure of conformity, which called for stark courage as well as flaming conviction for a school board or principal to shoulder the overcoming of the foregoing obstacles, as well as dealing with objections by parents not sufficiently informed, instead of continuing in the safe, well-trodden paths.

8) Finally, last but by no means least, the active hostility of vested interests, intellectual as well as financial -- a phenomenon by no means confined to the 19th century. The motivation of a commercial publisher who sees his market for a highly profitable textbook series, representing a considerable investment, threatened, is sufficiently obvious, and we are all familiar with brass-knuckle tactics in that field. There is also, however, a more poignant intellectual vested interest, that of the educator-author who has developed his whole educational philosophy on the major premise that the subject matter of elementary reading and writing instruction is traditionally-spelled English, and has perhaps authored a successful reading series, based on one or another of the various "emergency hospital" techniques. The shock of having the rug pulled from under his major premise, thereby invalidating much of the superstructure, is not conducive to dispassionate educational statesmanship, and when it touches the pocket nerve as well, via diminished royalties, the results in too many cases are all too predictable.

Against such handicaps, the astonishing aspect is not that those earlier efforts did not survive and succeed in establishing a beachhead for phonemic notations as initial teaching media, but that the driving force of their champions succeeded so well, while it was applied.

## i.t.a.

Against the background of past history, what does i.t.a. have going for it that was not present before?

Firstly, a leader of genius, integrity, and immense energy, Sir James Pitman, who combined for the first time, three indispensable attributes: a dedicated and technically competent understanding of the problem, hereditary as well as acquired; command of substantial publishing resources; and high-level contacts sufficient to persuade the establishment to sanction the crucial first step, adequate experimentation in the schools under unimpeachable auspices.

Secondly, Sir James' insistence on the sole purpose of better teaching of reading and writing, expressly disavowing the traditional, as well as family and personal, link to spelling reform.

Thirdly, a markedly superior medium combining several important characteristics: a structure shaped to the express purpose of an initial teaching medium, rather than as a spelling reform notation; a time-tested phonemic basis, derived from Pitman and Ellis and *New Spelling*, as well as from the century and a quarter experience of Pitman Shorthand; skillfully selected concessions from strictly phonemic writing (a more important factor than most people realize) to achieve maximum compatibility with T.O. in the interest of minimum effort of transition; restriction to one lower-case alphabet; and design of the additional new characters to retain or, so far as practicable, suggest the more familiar T.O. spellings of each phoneme, and preserve the "top coastline" of T.O.

Fourthly, a more favorable educational climate, accustomed to standardized tests and objective measurements, in which valid research can command immediate attention and respect; a climate more hospitable to change in the established order.

Fifthly, assured financial support for the beginning, as a venture of faith, from the Pitman publishing interests and from Sir James himself, and at one point from the British Ministry of Education, supplemented by very substantial aid from foundations such as did not exist a century ago, including the Ford Foundation and the Fund for the Advancement of Education as well as the Grant Foundation (acting thru the Educational Records Bureau of New York); all of whom have recognized the transcendent importance of the problem which i.t.a. has set itself to solve.

What has i.t.a. thus far accomplished?

Firstly, a body of research, sufficient to establish beyond question, for those who will examine the evidence without prejudice, the validity of the fundamental thesis -- the markedly superior results to be attained by use of a phonemic notation as an initial teaching medium -- and to indicate some of the more important opportunities for further research on various secondary factors.

Secondly, substantial evidence that the gains from i.t.a. go far beyond improved facility in reading and writing, important tho that is. By contrast with the frustrations of T.O., in which the child must incessantly disregard analogy and reject the results of observation, the success-motivated "learning by discovery" in applying the rational i.t.a. code, tends to influence the child's whole attitude toward schooling. The amazing increase in creative writing, observed in almost all i.t.a. classes, bears witness to this. Furthermore, the substantial saving of time in mastery of the fundamental processes of reading and writing is an invaluable resource in reorganizing a greatly overburdened curriculum.

Thirdly, a diffusion, partly experimental but largely definitive adoptions, which for Great Britain has been officially estimated to include, as of 1965, "10% of the primary-age children in the country" (29); and in the United States, as of 1966, extended into 49 states, including 20% of the school districts in New York State.

Production, sale, or distribution of i.t.a. materials, as of 1966, by over

80 commercial organizations in the United States, Great Britain, and Canada, including over 700 titles available in i.t.a. (30); figures which have, by now, significantly increased.

What of the road ahead? There is a wide field for further research on teaching methods to develop the fullest potentialities of the medium. Mere transliteration of materials or transposition of theories developed within the limitations of T.O. falls far short of meeting this goal. Also, there is great need to develop and standardize new tests to measure more justly the real factors of learning and achievement involved.

What is emphatically *not* needed is tinkering with details of the medium itself, *at this time*. Of course, precise details of the configurations of the added characters are not sacrosanct for all time. Of course, some of the spelling decisions on difficult cases, by the Foundation Spelling Committee charged with the responsibility of maintaining the integrity of the notation and its application, may eventually be challenged in the light of accumulated experience. Right now, however, the gain in results from altering any, or even all, of these minor factors would be utterly insignificant by comparison with the harm which would come from what Sir James has referred to as Babelization. Sir James' action in dedicating i.t.a. freely to all publishers everywhere (30) rather than retaining proprietary rights, was the act of an educational statesman rather than a publisher; but it was no less the act of a farsighted educational statesman to couple that dedication with the sole condition that it must be used as intended and directed by a single unifying authority (37). Schools considering the purchase of i.t.a. materials from whatever sources, should be assured that they are in fact authentic and fully compatible with i.t.a. materials from any other source; and publishers should be equally assured that i.t.a. materials which they produce will not become obsolete before a worth-while period of sales. Babelization, once permitted, could well become the secret weapon of those interests which would welcome the disappearance of i.t.a. from the educational scene.

One parallel aspect, not of i.t.a., but of the underlying i.t.m. thesis, does merit immediate, independent investigation: the possibility of attaining comparable results without new characters; that is, employing a no-new-letter digraph notation, strictly within the limitations of the universally available Roman alphabet -- a problem to which World English Spelling is particularly addressing itself.

## THE ROLE OF WES (WORLD ENGLISH SPELLING)

The early history of WES as a spelling reform notation, deriving directly from the initiative of the British Simplified Spelling Society, has already been outlined; together with the case for the middle way, from the spelling reform point of view. Also, however, we have examined the reasons which rule out the likelihood of making any significant impression on the spelling habits of the present adult generation. What, then, is the function of WES today?

As I see it, WES should properly be regarded as a typewriter-oriented version of i.t.a. To fulfill this function successfully, it should abandon its strictly spelling reform character, and make substantially the same further concessions from fully phonemic writing which i.t.a. has made, and for the same purpose, maximum compatibility with T.O. Just such concessions are, in fact, now under discussion with the Simplified Spelling Society, for while the responsibility for WES rests with the Simpler Spelling Association, it is obvious that no copyright control can protect the mere rearrangement of the letters of the Roman alphabet, and complete agreement between the British and American organizations might well operate as somewhat of a deterrent to the compulsive urge to tinker with the structure of a phonemic notation, instead of accepting and using it, which seems to affect nearly every amateur who stumbles into the field. Appendix E exhibits WES with the proposed changes in effect. Appendix F shows how closely i.t.a. and WES would correspond.

With those adaptations definitely determined, WES as an i.t.m. should be subjected soon to controlled experimentation to determine whether the results to be attained are, in fact, comparable with the results from i.t.a. I am not suggesting that we should either seek or expect better results. Indeed, I should rather expect the pros and cons of the two versions to balance out fairly evenly. If, however, this should prove to be the case, such a Roman alphabet variant of i.t.a. has at least three important contributions to make:

1) Use of the the standard keyboard typewriter as an instrument of instruction from the very beginning, as demonstrated by Wood and Freeman (56), under T.O. conditions, some 35 years ago. Under i.t.m. conditions, which appear to make possible the successful introduction of reading and writing somewhat earlier than with T.O., there is an added value in the simple motor response of finding and pressing a key, as compared with the execution by pencil of even the simplest letter forms, by labored motions which the child is not yet mature enough to control. i.t.a. typewriters would not be a satisfactory alternative, for apart from greater cost and limited usefulness, a totally different keyboard would tend to develop confusion instead of carry-over when the child meets the ordinary typewriter later on, as many do. I am told that in the New York City schools today, the plan is that every child who reaches the fifth grade will be introduced to the typewriter at that point.

2) Potentially more important, in the larger view, a phonemic notation writable on the standard typewriter opens the way for the adult individual who is impatient with the idiosyncrasies of T.O. to carry over into his own personal writing, which Sir James rightly distinguishes from writing for reproduction, some measure of the phonemic writing ability which he acquired in school; providing, in advance of any formal measures of spelling reform, a little leaven for the T.O. lump.

3) Finally, and by far the most important, WES as a Roman alphabet i.t.m., writable on any of 10 million or more standard keyboard typewriters, and printable at any of 10,000 or more printeries equipped with Roman alphabet type faces, offers an immediate opportunity to advance the already rapid progress of English as the dominant second language of the world -- in the immediate future, without awaiting the slow processes leading to spelling reform for the English-speaking peoples. The substantially "self-reading" compatibility of WES, even for one who has never seen the key, opens the way, for one who has learned English as a second language by the aid of WES to the point where he can speak it and *read* T.O., to shrug off the considerable added burden of learning to *write*, i.e., to spell, T.O. (a substantially greater burden, especially abroad, where one is not constantly surrounded by English in T.O.) and to continue to *write* phonemically in WES, just as bilingual scholars often correspond, each writing in his own language. It is no answer to suggest that i.t.a. tyepwriters (with their radically altered keyboard) are readily available, for the inhibiting effect of even a slight obstacle is very great.

Let it be emphasized in all this that these still undetermined potentialities of WES must not be allowed to impugn the impressively demonstrated actualities of i.t.a., with its already large and rapidly growing resources, and the research which promises to make them still more effective. WES is to be regarded as a potential supplement or extension of i.t.a., rather than as a rival.

## THE FINAL OUTCOME

I have traced, somewhat briefly, the ancestry of i.t.a. and hinted at its posterity. As I see it, the ultimate destiny of i.t.a., a generation or so in the future, is to render itself unnecessary, thru clearing away the chief obstacles to the spelling reform which gave it birth. Meantime, even the most entrenched opponents of spelling reform, if some of that vanishing race are still around, should not grudge the present generation the substantial gains in effective mastery of reading and writing T.O. (including spelling in T.O.!), which i.t.a. achieves. In any event, the awakened consciousness of the confused state of T.O. and the awareness, by contrast with the phonemic writing of i.t.a., that it is unnecessary, is one of the cumulative factors building up, not merely a willingness, but an insistent demand for spelling reform. Perhaps, if i.t.a. lives and prospers as, on its merits, it will and must, by the close of the present millennium, now scarcely a generation away, we spelling reformers who have been wandering for 400 (not 40) years in the wilderness of T.O. may be in sight of the promised land.

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## APPENDIX A

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### Principls of '76

(1) The true and sole office of alfabetic writing is faithfully and intelligibly to represent spoken speech. So-called "historical" orthografy is only a concession to the weakness of prejudice.

(2) The ideal of an alfabet is that every sound should hav its own unvarying sign, and every sign its own unvarying sound.

(3) An alfabet intended for use by a vast community need not attempt an exhaustiv analysis of the elements of utterance and a representation of the nicest varieties of articulation; it may wel leav room for the unavoidabl play of individual and local pronunciation.

(4) An ideal alfabet would seek to adopt for its characters forms which should suggest the sounds signified, and of which the resemblances should in sum mezure represent the similarities of the sounds. But for general practical use there is no advantage in a system which aims to depict in detail the fysical processes of utterance.

(5) No language has ever had, or is likely to hav, a perfect alfabet, and in changing and amending the mode of writing of a language alredy long writn, regard must necessarily be had to what is practically possibl quite as much as to what is inherently desirabl.

(6) To prepare the way for such a change, the first step is to break down, by the combined influence of enlightened scolars and of practical educators, the immense and stubborn prejudice which regards the establisht modes of spelling almost as constituting the language, as having a sacred character, as in themselvs preferabl to others. All agitation and all definit proposals of reform ar to be welcumd so far as they work in this direction.

(7) An alterd orthografy will be unavoidably offensiv to those who ar first called upon to uze it; but any sensibl and consistent new system wil rapidly win the harty preference of the mass of writers.

(8) The Roman alfabet is so widely and firmly establisht in use among the leading civilized nations that it can not be displaced; in adapting it to improved use for English, the efforts of scolars should be directed towards its use with uniformity and in conformity with other nations.

## S S A Fonetic Alfabet

| Caracter Lower case | Caracter Capital | Name | As in |
|---|---|---|---|
| | | *24 consonants* | |
| p | **p** | *pə* | pin, cup |
| b | **b** | *bə* | bin, cub |
| t | **t** | *tə* | ten, bet |
| d | **d** | *də* | den, bed |
| k | **k** | *kə* | come, back |
| g | **g** | *gə* | gum, bag |
| f | **f** | *fə* | fan, safe |
| v | **v** | *və* | van, save |
| ɦ | **ɦ** | *ɦə* | thigh, bath |
| ħ | **ħ** | *ħə* | thy, bathe |
| s | **s** | *sə* | seal, race |
| z | **z** | *zə* | zeal, raise |
| ʃ | **ʃ** | *ʃə* | assure, rush |
| ʒ | **ʒ** | *ʒə* | azure, rouge |
| ć | **ć** | *ćə* | choke, rich |
| j | **j** | *jə* | joke, ridge |
| m | **m** | *mə* | met, him |
| n | **n** | *nə* | net, thin |
| ŋ | **ŋ** | *ʊŋ* | ink, thing |
| l | **l** | *lə* | laid, deal |
| r | **r** | *rə* | raid, dear |
| w | **w** | *wə* | wet, we |
| y | **y** | *yə* | yet, ye |
| h | **h** | *hə* | head, he |

| Caracter Lower case | Caracter Capital | Name | As in |
|---|---|---|---|
| | | *13 vowels* | |
| a | **a** | *ak* | am, pat |
| ɑ | **ɑ** | *ɑ* | alms, part, ma |
| e | **e** | *ek* | edge, let |
| α | **α** | *α* | age, late, may; air |
| i | **i** | *ik* | is, sit, army |
| ɛ | **ɛ** | *ɛ* | ease, seat, me |
| ɒ | **ɒ** | *ɒk* | odd, not |
| ɔ | **ɔ** | *ɔ* | awed, naught, pshaw |
| ʊ | **ʊ** | *ʊk* | up, ton |
| o | **o** | *o* | open, tone, show |
| u | **u** | *uk* | full, should |
| ɯ | **ɯ** | *ɯ* | fool, shoed, shoe |
| ə | **ə** | *ər* | about, murmur, data |
| | | *4 difthongs* | |
| ȧ | **ȧ** | *ȧ* | aisle, pint, by |
| ɑɩ | **ɑɩ** | *ɑɩ* | owl, pound, bough |
| ɔ̇ | **ɔ̇** | *ɔ̇* | oil, point, boy |
| iɯ | **iɯ** | *iɯ* | used, pure, due |
| | | *Supplementary signs* | |
| ƀ | **ƀ** | *ƀ* | the (wordsign) |
| • | * | *capsign* | |

To capitalize a tipewritten or longhand word, write the capsign before it.

Fonetic print capitals ar hevy or boldface letters, otherwise similar to the small or lower-case letters.

## liŋkən'z getizbərg adres

forskor and sevn yɛrz əgo ɑɩr fɑħərz brɔt forɦ ɒn ħis kɒntinənt ə niɯ nαʃən, kənsɛvd in libərti, and dedikαted tu ƀ prɒpəziʃən ħat ɔl men ɑr krɛαted ɛkwəl.

nɑɩ wɛ ɑr engαjd in ə grαt sivil wɔr, testiŋ hweħər ħat nαʃən, ɔr eni nαʃən so kənsɛvd and so dedikαted, kan lɔŋ endiɯr. wɛ ɑr met ɒn ə grαt batl-fɛld ɒv ħat wɔr. wɛ hav kʊm tu dedikαt ə porʃən ɒv ħat fɛld az ə fȧnəl restiŋ-plαs fɔr ħoz hɯ hɛr gαv ħαr lȧvz ħat ħat nαʃən mȧt liv. it iz ɔltəgeħər fitiŋ and prɒpər ħat wɛ ʃud dɯ ħis.

bʊt in ə lɑrjər sens, wɛ kanɒt dedikαt — wɛ kanɒt kɒnsikrαt — wɛ kanɒt halo — ħis grɑɩnd. ƀ brαv men, liviŋ and ded, hɯ strʊgld hɛr, hav kɒnsikrαted it fɑr əbʊv ɑɩr pɯr pɑɩər tu ad ɔr ditrakt. ƀ wərld wil litl not nɔr lɔŋ rimembər hwɒt wɛ sα hɛr, bʊt it kan nevər fərget hwɒt ħα did hɛr. it iz fɔr ʊs, ƀ liviŋ, rαħər, tu bɛ dedikαted hɛr tu ƀ ʊnfiniʃt wərk hwić ħα hɯ fɔt hɛr hav ħʊs fɑr so nobli ədvanst. it iz rαħər fɔr ʊs tu bɛ hɛr dedikαted tu ƀ grαt task rimαniŋ bifor ʊs — ħat frɒm ħɛz ɒnərd ded wɛ tαk inkrɛst divoʃən tu ħat kɔz fɔr hwić ħα gαv ƀ last ful meʒər ɒv divoʃən; ħat wɛ hɛr hȧli rizɒlv ħat ħɛz ded ʃal nɒt hav dȧd in vαn; ħat ħis nαʃən, ʊndər gɒd, ʃal hav ə niɯ bərɦ ɒv frɛdəm; and ħαt gʊvərnmənt ɒv ƀ pɛpl, bȧ ƀ pɛpl, fɔr ƀ pɛpl, ʃal nɒt periʃ frɒm ƀ ərɦ.

Brief study of the preceding page wil enable anyone to read the above selection accurately. A few hours of study wil giv anyone at all familiar with fonetics a practical working knowledge of this simplest and best fonetic alfabet for English.

## APPENDIX C

### The case against spelling reform

The principal arguments against spelling reform, with their corollaries, summarized; with appropriate comments and quotations

1) STATEMENT: Phonetic spelling would obscure the derivation of words.

> Corollary: to memorialize historic facts of a language is a legitimate or primary function of a current orthography.

COMMENTS

The primary purpose of spelling is to record speech, which *is* the language.

> "The true and sole office of alphabetic writing is faithfully and intelligibly to represent spoken speech." American Phililogical Association, 1876 report.

The etymologist is the first to repudiate this argument.

> "In the interests of etymology we ought to spell as we pronounce. To spell words as they used to be pronounced is not etymological, but antiquarian." *W. W. Skeat.*

Phonetic spelling would give a continuous moving picture of the whole history of each word, whereas fixed conventional spelling gives, at best, only a single still picture of one episode.

> "The real etymologist, the historic student of language, is wholly independent of any such paltry assistance, and would rejoice above measure to barter every 'historical' item in our spelling during the last 300 years for a strict phonetic picture of the language as spoken at that distance in the past." *William Dwight Whitney.*

Even such etymologic information as is suggested is often in error; the result of some superficial wrong assumption, e.g.,

> *comptroller debt delight haughty island sovereign sprightly*

Such accurate information as present conventional spelling gives is now securely preserved in innumerable books, regardless of present or future spelling.

The scholar does not need, the average layman does not appreciate or understand such information.

2) STATEMENT: Phonetic spelling would cause serious confusion between words of like sound (homophones), now distinguished by different spellings; e.g.,

right, rite, write, wright
cent, scent, sent
road, rode, rowed
sew, so, sow
to, too, two

buy, by
hear, here
hour, our
knew, new
one, won, etc., etc.

Corollaries: A spelling is a word.
Such distinctions are an intentional or desirable feature of English spelling.

COMMENTS

Context makes clear such distinctions in speech, in which spelling gives no help; still more so in the more deliberate processes of reading, with opportunity to glance backward or forward if necessary.

As against a few hundred homophones now distinguished more or less fortuitously by different spellings, there are in traditional orthography many thousands of words of like sound *and* spelling (homographs), and there is no demand to create artificial distinctions for these. A few suggestive examples are --

*bay* ( a color, a tree, part of a building, a body of water, a prolonged bark)
*fair* (good weather, impartial, an exposition)
*right* (a privilege, opposite of left, opposite of wrong)
*sound* ( a condition, a noise, a body of water)
*spring* (a season, a leap, an elastic device)
*state* (to express in words, a condition, a unit of government)
*can* (to be able, a container)
*down* (a direction, soft feathers)
*note* (a musical tone, a monetary obligation)
*pool* (of water, a game)
*present* (a time, a gift)
*well* ( a state of health, a hole in the earth)

Fries (18) reports that for the 500 most used words of English the *Oxford Dictionary* records 14,070 separate and different meanings -- an average of 28 different meanings for each word.

There is another group of homographs, spelled alike but pronounced differently, occasionally confused in reading, which phonemic spelling would clearly distinguish, e.g.,

*bow* (boe, bou); similarly *mow, row, sow*
*close* (cloes, cloez); similarly *excuse, house, use*, etc.
*aged* (aejd, aejed); similarly *blessed, (blest, blessed), beloved, learned*
*lead* (leed, led); similarly *read*
*live* (liv, liev); *tear* (taer, teer); *wind* (wind, wiend); *wound* (wuund, wound)

3) STATEMENT: Phonetic spelling would require all existing books to be reprinted.

COMMENTS

Most current reading matter is ephemeral.

Books of enduring worth are constantly being reprinted in current spelling.

No one but the linguistic scholar today reads Chaucer or Spenser, Shakespeare, or even Milton, in the original spelling.

Compatibility makes a *reading* knowledge of traditional orthography relatively easy.

4) STATEMENT: Phonetic spelling would require a fixed standard of pronun-

ciation which does not exist.

COMMENTS

Accurately *phonetic* writing is neither necessary nor desirable. At the phonemic level, there does exist an acceptable standard, increasingly established by national and international radio and television. As early as 1935, the British Broadcasting Corporation had successfully established a standard, *Broadcast English,* for announcers.

So far as regional differences are concerned, the individual tends to project on to the phonemic symbol his own interpretation.

The few broad differences in pronunciation, between British and American usage, e.g.,

*either (iether, eether), clerk (clark, clurk), leisure (lezher, leezher)* will be no more confusing in phonetic spelling than in speech, or than differences in choice of words, such as *lift* for *elevator.*

Phonetic spelling would be a strong conservative factor in preventing deterioration or corruption of language. Present lack of any clearly discernible relation between the written and the spoken word conduces strongly to variation.

5) STATEMENT: No one has authority to tamper with the language. "The language of Shakespeare and Milton is good enough for me."

Corollaries: The written word is the language.
The language (or spelling) used by past masters of English has remained substantially static,

or

Language (or spelling) evolution is a natural process, independent of human control.

COMMENTS

Our language is speech, not spelling; the spelling is, or should be, no more than a picture (now too often it is a cartoon) of the spoken word. Change, both in language and, until recently, in spelling has been continuous, both before and after Shakespeare and Milton.

Phonetic spelling would conform to and record actual change and, incidentally, would tend to reduce change by giving guidance as to pronunciation, now wholly lacking.

All evolution in spelling, thus far, has resulted from conscious, deliberate, individual choice or action.

6) STATEMENT: Phonetic spelling is ugly, uncouth, grotesque.

COMMENTS

No one would seriously claim that the particular configurations of traditional orthography, the succession of ascending, descending, and middle letters, possess any intrinsic esthetic value. The true charge against phonetic spelling is strangeness.

Many proposed phonetic alphabets have been esthetically unpleasing, due to diacritics, wrong fonts, inverted letters, non-Roman characters, etc., but there is no inherent reason why a phonetic alphabet cannot be made as esthetically pleasing as the present Roman alphabet, if it observes the same canons of design; e.g., the Simpler Spelling Association Fonetic Alfabet.

The i.t.m. technique, which accustoms the eye to rational forms, is one important element in breaking down the next generation's resistance to spelling reform.

7) STATEMENT: It's too much trouble. I have learned to spell.

COMMENTS

This, the inertia which dreads the effort of the change, is the main reason why the present adult generation should not be expected to change.

> "It is the generations of children to come who appeal to us to save them from the affliction which we have endured and forgotten." *William Dwight Whitney*

## APPENDIX D

### Phonemic Notations and the Roman Alphabet
Godfrey Dewey

The Roman alphabet is today the most widely used and universally understood medium of written communication. With the addition of a few diacritics and a very few additional characters, it is the alphabet of all Western European and Scandinavian languages, and in the Eastern world, it is the alphabet into which all others are transliterated to achieve international understanding. A recent catalog of the University of New Delhi prints its principal information, in the one catalog, in seven different languages, using five different, non-Roman alphabets, but the introduction and supplementary material are in English in the Roman alphabet; and an official pronouncement of Communist China announces as one of its major educational goals the adoption of the Roman alphabet.

English orthography, which for substantially phonemic writing should distinguish about 41 sounds, is at present restricted to the 26 letters of the Roman alphabet, three of which (c, q, x) are phonemically duplicates. In consequence, one finds within the 70,000 words, more or less, of an abridged dictionary (exclusive of proper names), over 500 different spellings of these 41 sounds; a chaos and confusion disastrous for elementary education and burdensome thruout adult life, as well as enormously costly thru the writing and printing of superfluous letters.

The problem of reducing this confusion to a substantially one-symbol, one-sound phonemic notation may be approached in three ways:

1) *Standardizing* the Roman alphabet by assigning to each single letter, and to each digraph selected to represent those sounds for which the available single letters do not suffice, a single sound. This approach has the immense advantage, for immediate practical purposes, of providing a substantially phonemic notation, sufficiently similar to the traditional orthography to be essentially "self-reading" by one who has never studied the key, which remains strictly within the resources of the universally available Roman alphabet; but, because of the number of consistently used digraphs required, it contributes nothing to reducing the number of characters to be written or

printed. The World English Spelling of the Simpler Spelling Association, based on the New Spelling of the British Simplified Spelling Society, progressively developed over a period of more than fifty years by the ablest specialists on both sides of the Atlantic, comes nearest to achieving the maximum possibilities of this admittedly cumbersome but immediately practicable solution.

2) *Supplementing* the Roman alphabet by assigning to each of the 23 useful letters a single invariable value and creating some 18 appropriately designed new letters, typographically congruous with the canons of design of the Roman alphabet. If the new letter forms are rightly chosen, such a one-sign, one-sound phonemic notation can be, like the first category, essentially self-reading, even for one who has never examined the key. Such a phonemic alphabet, which would save one letter in six, as compared with our present spelling, or about $170,000,000 out of each $1,000,000,000 of writing and printing cost, is of course the ideal ultimate solution, but the difficulties of making available the necessary new characters on typewriters and composing machines thruout the world are so great that while such a notation can be immediately useful for textbook purposes or dictionary keys, general adoption of this solution probably lies several generations in the future. Its exact form at that time can, of course, hardly be predicted, but at the moment, the Simpler Spelling Association phonetic alphabet, the characters of which were typographically refined by Frederick W. Goudy, the foremost type designer of his generation, comes nearest to meeting all the criteria for such a solution.

To the question, why not just adopt the International Phonetic Association alphabet, already widely familiar, in somewhat variant forms, to linguistic scholars everywhere, there are two answers: its uncouth appearance, and the excessive number of characters which must be written, largely nullifying the enormous savings in writing and printing, on which George Bernard Shaw laid chief emphasis. As employed by Professor Daniel Jones in his English Pronouncing Dictionary, that alphabet analyzes two of the 24 consonants and six of the 17 vowel sounds of the S.S.A. alphabet as dipthongs and accordingly writes them as digraphs, and writes four vowel sounds with a detached diacritic, which constitutes an additional character: with the result that it eliminates only 4.65% of the characters required for traditional orthography, as compared with 16.95% for the S.S.A. phonemic alphabet.

3) *Supplanting* the Roman alphabet by creating and making available on typewriters and composing machines thruout the world at least 41 wholly new characters - the solution advocated by Shaw for his PROPOSED BRITISH ALPHABET (see particularly Shaw's Preface to "The Miraculous Birth of Language" by R. A. Wilson) -- is a fantastic proposal which is, from a practical standpoint, completely unrealistic. Since the whole purpose of writing or printing is to be read, and since, for the person who had not mastered the key, such a notation would be a completely unintelligible cipher, it is quite inconceivable that any writer or publisher would deliberately so obstruct communication with his desired readership. Even a dictator, with power to reform English spelling by decree, as Kemal Ataturk reformed Turkish -- in that case by *adopting* the Roman alphabet -- would hesitate to cut his country off from facile communication with the rest of the world by enforcing a notation wholly unknown outside his own jurisdiction. It would almost seem, therefore, as if Shaw's declared purpose for his PROPOSED BRITISH ALPHABET, to "use it side by side with the present lettering until the better ousts the worse" must have been written with tongue in cheek.

At another point, also, in the same Preface, Shaw, who used a simple form of Pitman Shorthand for many years for most of his writing and was therefore fully conscious of the immense values of shorthand for personal use, was equally unrealistic in his conception of his PROPOSED BRITISH ALPHABET, for he describes at some length the characters of Sweet's Current Shorthand as indicating the type of character he had in mind for writing *and printing*. The idea of substituting shorthand characters for the Roman alphabet for printing goes back at least as far as Isaac Pitman's Stenographic Soundhand in 1837, and in so far as it would at one stroke substitute phonemic writing for the chaos of traditional orthography, it has a distinct appeal. Unfortunately, there is an inherent and inescapable contradiction between the requirements of shorthand and print, in that one must be appraised primarily in terms of the hand, the other in terms of the eye. The characters of a page of print are set up once and read perhaps a thousand, perhaps a million, times. The longest character, such as *m* takes no longer to type or set than the simplest character, such as *o*, and the requirements of letter form should, therefore, be determined solely by the greatest possible distinctness of form or minimum of effort for the eye. A page of shorthand, on the contrary, is written once and read, in general, but once or twice, the writing being the process involving enormously the greater effort and the one into which the time element chiefly enters, so that the paramount consideration is to minimize the effort of the hand, preserving only such distinctness of form as shall be readily and unmistakably perceptible to the eye. Since coincidence between the forms of minimum manual effort and maximum visual distinction is quite inconceivable, any attempt to combine the two, as called for by Shaw's specifications, must of necessity fall far short of the best forms for either, considered separately. Also, like any other notation of the "supplanting" category, it lacks the essentially self-reading quality, attainable with either the "standardizing" or "supplementing" category, without which no solution can hope to be translated from theory in to practice.

In summary:

A substantially phonemic, no-new-letter code, using digraphs as required to produce an essentially self-reading notation, can make an immediate and important educational contribution as an initial teaching medium in the earliest grades, or for teaching English as a second language, at the same time that it conditions the next generation to demand or accept a phonemic notation for all reading and writing. Also, for the adult abroad who has been taught English as a second language, such a notation offers the exciting possibility of continuing to use it as an international auxiliary medium of communication; *reading* traditional orthography, but continuing to *write* phonemically, thereby bypassing the considerable added burden of acquiring a *writing* knowledge of our present chaotic English spelling.

A one-sign, one-sound phonemic notation, supplying the necessary new characters in harmony with the Roman alphabet, can render immediate practical service as a pronunciation key for dictionaries or textbooks, vastly superior to the illogical mishmash of diacritic-ridden symbols which characterizes most American dictionaries; but because of the enormous practical difficulties of making the new characters everywhere available, such a notation is unlikely to achieve adoption for general use for several generations to come.

Phonemic notations which completely reject the Roman alphabet, whether for shorthand-type characters or no, are an interesting subject for philosophic speculation, but, cutting loose from the rest of the world and lacking the essentially self-reading quality indispensable to any gradual or voluntary introduction, are likely to remain in the realm of philosophic speculation for the foreseeable future.

# APPENDIX E

## World English Spelling
## (WES)
## Writer's list

*Consonants*

| | *As in* |
|---|---|
| **p** | pay, happy, cap |
| **b** | bay, rubber, cab |
| **t** | town, letter, bit |
| **d** | down, ladder, bid |
| **c** | came, account, public; back |
| **k** | keep, week; back; expect; quite |
| **g** | game, ragged, bag; exact |
| **f** | fast, office, photograph, safe |
| **v** | vast, never, save |
| **thh** | thought, nothing, both |
| **th** | that, rather, with |
| **s** | seal, lesson, city, race, base |
| **z** | zeal, puzzle, is, raise, size |
| **sh** | shall, pressure, nation, wish |
| **zh** | jabot, pleasure, vision, rouge |
| **ch** | check, watch, church |
| **j** | just, general, stage, judge |
| **m** | might, common, them |
| **n** | night, dinner, then |
| **ng** | thing, long, going, single |
| **nk** | think, bank, ankle, uncle |
| **l** | late, fellow, deal |
| **r** | rate, married, dear |
| **w** | wet, forward, one, quick |
| **wh** | which, everywhere |
| **y** | yet, beyond, million; pity; you |
| **h** | had, behind, who |

*Vowels and diphthongs*

| | *As in* |
|---|---|
| **a** | at, man; ask; about, data |
| **aa** | alms, father, bah; (ask) |
| **ar** | army, market, far |
| **e** | edge, men, said, head, any |
| **ae** | age, main, say, great |
| **aer** | air, care, their |
| **i** | it, him, pretty, give |
| **ee** | each, here, see, be |
| **o** | on, bother, not; was, what |
| **au** | author, law, all, water, ought |
| **or** | order, north, for; story, more |
| **u** | up, other, but, some, touch |
| **oe** | old, note, goes, so, coal, show |
| **oo** | good, should, woman, put |
| **uu** | food, group, rule, blue, grew |
| **ie** | ice, tie, kind, might, by |
| **ou** | out, pound, now, bough |
| **oi** | oil, point, boy |
| **ue** | use, music, due, few |
| **er** | further, collar, motor, murmur |
| **ur** | further, her, early, first, work |

For teaching purposes, use only lower-case letter forms.

Separate by a dot successive letters which might otherwise be read as a digraph –

*short.hand, mis.hap, en.gaej, man.kiend*
*gae.ety, ree.elect, hie.est, loe.er, infloo.ens, pou.er, emploi.ee*

## lincon'z gettizberg address

forscor and seven yeerz agoe our faatherz braut forth on this continent a nue naeshon, conseevd in liberty, and dedicaeted too the propozishon that aull men ar creeaeted eekwal.

nou wee ar en.gaejd in a graet sivil waur, testing whether that naeshon, or eny naeshon soe conseevd and soe dedicaeted, can long enduer. wee ar met on a graet battlfeeld ov that waur. wee hav cum too dedicaet a porshon ov that feeld az a fienal resting-plaes for thoez huu heer gaev thaer lievz that that naeshon miet liv. it iz aultogether fitting and proper that wee shood duu this.

but in a larjer sens, wee cannot dedicaet – wee cannot consecraet – wee cannot halloe – this ground. the braev men, living and ded, huu struggld heer, hav consecraeted it far abuv our poor pou.er too add or detract. the wurld will littl noet nor long remember whot wee sae heer, but it can never forget whot thae did heer. it iz for us, the living, rather, too bee dedicaeted heer too the unfinisht wurk which thae huu faut heer hav thus far soe noebly advanst. it iz rather for us too bee heer dedicaeted too the graet task remaening befor us – that from theez onord ded wee taek increest devoeshon too that cauz for which thae gaev the last fooll mezher ov devoeshon; that wee heer hiely rezolv that theez ded shall not hav died in vaen; that this naeshon, under god, shall hav a nue burth ov freedom; and that guvernment ov the peepl, bie the peepl, for the peepl, shall not perish from the urth.

## APPENDIX F

### Transliteration chart
### from Pitman's Initial Teaching Alphabet to
### World English Spelling

| i.t.a. | WES | i.t.a. key word |
|---|---|---|
| p | p | pen |
| b | b | bed |
| t | t | tree |
| d | d | dog |
| c | c | cat |
| k | k | key |
| g | g | leg |
| f | f | feet] |
| v | v | voice |
| ʈh | thh- | three |
| ŧh | th | the |
| s | s | spoon |
| z | z | zebra |
| ƨ | (z) | daisy |
| ʗh | ch | chair |
| j | j | jug |
| m | m | man |
| n | n | nest |
| ŋ | ng | ring |
| (ŋk) | nk | (ink) |
| l | l | letter |
| ɼ* | (r) | girl |
| w | w | window |
| wh | wh | when |
| y | y | yes |
| h | h | hat |

| i.t.a. | WES | i.t.a. key word |
|---|---|---|
| a | a | cap |
| ɑ | aa | father |
| (ɑr) | ar | (army) |
| e | e | egg |
| æ | ae | face |
| (ær) | aer | (air) |
| i | i | milk |
| ϵϵ | ee | key |
| o | o | box |
| au | au | ball |
| (or) | or | (order) |
| u | u | up |
| œ | oe | over |
| ω | oo | book |
| ω | uu | spoon |
| ie | ie | fly |
| ou | ou | out |
| oi | oi | oil |
| ue | ue | use |
| * | er | (over) |
| * | ur | (first) |

# 4. THE BOSTON READING EXPERIMENT (1866-1879): THE EVALUATION OF AN EARLY EDUCATIONAL INNOVATION WHICH WAS A FORERUNNER TO THE INITIAL TEACHING ALPHABET

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## INTRODUCTION:

If transitional writing systems (writing systems with grapheme/phoneme correspondences different from traditional orthography and used for a limited period of time for a special purpose, usually, to commence literacy instruction) were of recent origin, it would not be surprising that so little is known of their use. However, the fact that several have been tried in America alone during the past 120 years (Harrison, 1964), makes it obvious that there is need to shed light on certain aspects of their use, especially the reasons for their repeated abandonment. It is important to note in this regard that before a case can be made in favor of the use of transitional writing systems, their history of abandonment must be accounted for in terms unrelated to their efficacy.

As a result of a brief look at the use of several different transitional alphabets, Harrison (1964, p. 47) has come to the conclusion that abandonment resulted from either (1) an insufficiency of specially printed books, or (2) the loss of the guiding hand of the one who directed the introduction of the innovation and who supervised its use.

This paper presents the results of research on the introduction of Edwin Leigh's Pronouncing Orthography to the schools in Boston, Massachusetts beginning in 1866. It will attempt a brief answer to the question of why Pronouncing Orthography was abandoned in Boston within a few years of its first use on a city-wide basis despite the early acclaim of those who guided its use. First of all we will describe Pronouncing Orthography. Then, its introduction to the schools of Boston will be traced and finally we will turn to topics related to evaluating its effectiveness as a medium for literacy instruction.

## PRONOUNCING ORTHOGRAPHY:

Unlike many other transitional writing systems, Pronouncing Orthography is composed of more symbols than there are English phonemes -- seventy symbols in all. As a result, it was able to preserve the conventional spellings of English words while, nevertheless, unambiguously representing their phonemes For example, as a result of the use of nine "A's", Leigh's system was able to signal the various phonemes represented by the traditional "A" without altering the spelling of the word. Unsounded symbols, incidentally, were printed in light-faced type.

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It should be pointed out that this feature of Pronouncing Orthography (retaining conventional spellings) had survival value for it enabled it to avoid the charge that it masked the etymology of the language--a charge which, by the way, was considered to be quite serious when it had been levied against Phonotypy in the 1850's by the influential Rev. R. C. Trench, Archbiship of Dublin (Bothe, 1966, who cites the Phonotypic Papers No. V. *Waltham (Massachusetts) Sentinel*, February 4, 1859).

## PRONOUNCING ORTHOGRAPHY'S INTRODUCTION:

Pronouncing Orthography was first used in Boston's Lincoln School District in 1866 (Philbrick, 1872). In five years, its use had spread to some of the schools in 11 of Boston's 38 school districts and by 1874 it had spread to 32 districts. However, it was not until December 6, 1876, ten years after its first use, that the School Committee required that Pronouncing Orthography be used on a system-wide basis (Philbrick, 1877, P. 56).

## EVALUATING PRONOUNCING ORTHOGRAPHY:

During the academic year 1873-1874, Boston's Superintendent of Schools, John D. Philbrick, sent a questionnaire to the masters of the school districts asking them about their opinion of the new writing system. The following quotation from Philbrick's *Semi-Annual Report* 1874, (pp. 191-193) presents the results of the poll:

> The analysis of the replies shows, that of the masters of the six districts in which it has not been introduced, five expressed no opinion, and one thinks the advantages are counterbalanced by the disadvantages. Of the thirty-one masters of the districts where the system has been tried, two are undecided (one of them having had but a brief period of observation), and one is decidedly opposed to it; one would not go back to the old method, but thinks it not favorable to spelling; two who have not had time to test it fully approve as far as they have observed; four are rather doubtful as to its advantages; three express unqualified satisfaction with its results, and eighteen endorse it in emphatic terms.

In summary, of the 31 voting masters whose districts had tried Pronouncing Orthography, twenty-four pronounced themselves "for", five "against", and two were undecided about its merits. Such results as these must have been a source of great satisfaction for both Pronouncing Orthography's inventor, Edwin Leigh, and his chief supporter in Boston, John D. Philbrick. But this was probably no surprise to them for the report of the Boston School Committee two years earlier was also very favourable (*Annual Report*, 1871, pp. 7-8).

> We beg leave to say that six years of careful experiment in several schools in this city have shown the best results from this system. Pupils learn the sounds belonging to phonic type very readily; and, as those sounds are unchanging, the labor is much less than in gaining the mastery of a less number of letters, most of which are liable to arbitrary variations. But whether this reason is satisfactory to doubters or not, *the fact* leaves no room for dispute. Within six months ordinary pupils under this system get nearly through the second reader, -- a point which pupils by the old method are always eighteen months, and often two years in reaching. This is a constant, unvarying result. It is a moderate statement that every pupil instructed under this new method saves a year or more of time in preparing for the

> Grammar School. Is it not much to add a year to the practical duration of human life?

These comments give no hint of the circumstances which followed. In 1879, two years after Pronouncing Orthography's use was first required, the School Committee reversed itself by reinstating the common-type editions of the *Franklin Readers* as permissible first readers. Since the editions using Leigh's type were no longer required, Pronouncing Orthography was, as a result, on the wane in Boston.

In order to attempt explaining how it was that an innovation which had been received so favorably could have been rejected in so short a time, we should, perhaps, turn first to the two hypotheses proposed by Harrison. The first hypothesis, you may recall, is that transitional writing systems were abandoned as a result of an insufficient supply of specially printed books (Harrison, 1964, p. 47).

One should have thought that the profit motive alone would have been sufficient to induce American publishers to continue supplying books for which there is a demand. In fact, there is evidence to indicate that supplies of Leigh's editions of readers *were* available. For, on the back cover of a *Franklin Reader* which is in this writer's possession and which was used during the second decade of the 20th century in Concord, Massachusetts there is an advertisement for not only the *Franklin Readers* but the *Hillard Readers* as well, both printed in Leigh's Pronouncing Orthography. (The book, although undated, is obviously of more recent origin than those used in Boston in the 1870's). Furthermore, St. Louis used Pronouncing Orthography until 1891 or so (Bothe, 1967), a period fully twelve years after Boston abandoned it. Apparently, books printed in this special writing system were available (from Taintor Brothers, Merrill & Co., of New York) beyond the time when Boston abandoned it and perhaps at least as late as the second decade of the 20th century.

Harrison's second hypothesis, that "The experiments seem to have lost impetus when they lost the guiding force of the experimenter of the moment" (Harrison, 1964, p. 47), although if true is still not a satisfactory explanation for the demise of this educational innovation, does not seem to be supported by the facts either. For, although Pronouncing Orthography was abandoned approximately one year after Philbrick's retirement on March 1, 1878 (Eliot, 1879, P. 11), this was not the first time he had retired. Ill health had forced him to leave office on September 1, 1874 and despite the fact that he did return to that office on March 1, 1876 after an 18 month absence, Philbrick himself states that his return was an unexpected occurrence (Philbrick, 1876, pp. 153-154). We are led to ask why had Pronouncing Orthography survived his first absence of 18 months but could not survive 12 months without him three years later?

One event which intervened and which, therefore, suggests itself as a possible reason for the different effects of Philbrick's absence is the already-cited fact that on December 6, 1876, the School Committee had made the use of readers printed in Pronouncing Orthography obligatory. In order to attempt an understanding of how the School Committee's ruling could have sounded the death knell for Pronouncing Orthography, we will turn to a piece of educational research reported to the Second Annual International Conference on the Initial Teaching Alphabet.

In his study of the effectiveness of another transitional writing system as a means for teaching children to read the traditional alphabet, Robert A. McCracken (1966) employed two control groups in addition to his one experimental (i.t.a.) group. The children of one control group, in addition to receiving instruction in the traditional alphabet, had knowledge that they were part of an experiment as did the i.t.a. children; that is, they were observed regularly, etc. The second control group (called the subcontrol group), although taught to read by means of traditional orthography, were not given any information that they were to be included in an experiment.

At the end of first grade, testing all groups in the traditional alphabet showed that, in general, although the experimental (i.t.a.) group was superior to the subcontrol group on the Stanford Achievement Test, the experimental group was not superior to the control group. In addition, the control group's performance exceeded that of the subcontrol group to a statistically significant extent on every subtest of the Stanford.

These results suggest, of course, that it may have been the knowledge that they were part of an experiment, not the use of a special writing system, that led the experimental group to outperform the subcontrol group. Since novelty effects seem to be a factor requiring consideration in McCracken's research on the use of transitional writing systems, they should be taken into consideration in other studies before making judgments about the effectiveness of transitional writing systems.

It is important to note in this regard that any evaluation of Pronouncing Orthography in Boston should have been based on a comparison of the performance of children taught Pronouncing Orthography under experimental conditions, with all that entails, and children taught traditional orthography under equally motivating circumstances. But at this time, before the advent of experimental research in education, the Pronouncing Orthography children were compared either with (1) conventionally-taught children of previous years or, what is less likely, with (2) the conventionally-taught children in non-experimental classes the same year (in Boston this would have involved a between-schools comparison also). Either one of these comparisons would have allowed novelty effects to be confounded with (or added to) the effects of Pronouncing Orthography.

As a result, Boston educators made judgments about Pronouncing Orthography based on data analogous to that collected by McCracken when he compared his experimental and subcontrol (i.e., no special attention) groups. In such a comparison, of course, Pronouncing Orthography profited from the effects of especially motivating circumstances as did McCracken's i.t.a. group. Consequently, Bostonian educators may have been misled about the value of Pronouncing Orthography.

Developments in Boston certainly parallel what one would expect if "novelty effects" had been responsible for a part of Pronouncing Orthography's effectiveness. This explanation would account for the fact that Pronouncing Orthography withstood a ten year test when in an experimental status but did not last more than a few years after its adoption as the conventional writing system. When adopted on a widespread basis, of course, we could expect that there was a reduction in excitement following its use and a subsequent reduction in its effectiveness.

We have seen that the abandonment of Pronouncing Orthography is more likely attributable to novelty effects than the lack of specially printed books or the absence of John D. Philbrick. We have yet to consider evidence which bears on Pronouncing Orthography's value independent of the issue of novelty. In other words, we will now consider evidence which bears on the question of whether it was accurate for the School Committee to claim that the use of Pronouncing Orthography reduced by a year or more the time necessary to prepare for the Grammar School. That is, we will try to establish the level at which Pronouncing Orthography children were reading.

For this purpose, we will turn to the Programme of Studies which was used to specify the curriculum of the schools in Boston. Table I presents the reading curriculum for the Primary Schools (equivalent to present-day grades one through three) for the years 1864, 1871, and 1877. These years represent the periods (1) before Pronouncing Orthography was introduced, (2) after Pronouncing Orthography had been used by a few schools for approximately five years and (3) after Pronouncing Orthography's use had been made mandatory. If Pronouncing Orthography shortened the time it took to prepare for the Grammar School, the Programme should reflect this effect.

Comparison of the 1877 group with the earlier groups shows that any appearance of a savings in time is confined to the first year of schooling (classes 6 and 5). For, although it is true that by the time the 1864 and 1871 groups had finished the first reader printed in common type (at the end of the first year) the 1877 group was expected to finish the Leigh edition of the *Franklin Second Reader*, such a difference may be used to infer a year's savings in time only if Pronouncing Orthography children transferred from the Pronouncing Orthography edition of the second reader to the common type third reader.

Inspection of Table I reveals that they did not. At the beginning of the second year (fourth class) the experimental group returned to the common type edition of the second reader and took as long to complete it as those taught in the traditional orthography all along. The appearance of a savings disappeared after the children made the transition to the traditional orthography (T.O.)

This analysis suggests two things. First, that the School Committee claim was based upon an inappropriate comparison -- the comparison of the Pronouncing Orthography group with the T.O. group when each was reading in its own medium. Since Pronouncing Orthography was undergoing evaluation to determine whether it was a better means for teaching children to read T.O., the post-transfer comparison would have been the proper one. Second, this analysis also suggests that, despite claims to the contrary, the Pronouncing Orthography children *did* encounter some difficulty when making the transition to T.O. otherwise they would not have had to reread the second reader.

Remarkably enough, these findings can also be found in the current research on i.t.a. (Gillooly, 1966; 1967). That is, the i.t.a. groups, too, have been shown to be superior to the T.O. so long as both are reading in their own medium. The post-transition data, on the other hand, show that at the end of first grade no difference exists between the groups. This general fact of regression from a pre-transition status of superiority to a post-transition status of equality indicates that children who are introduced to reading by means of transitional writing systems experience some difficulty in making the transfer to the traditional writing system.

CONCLUSION:

From the evidence collected in Bostin, then, it appears as though Pronouncing Orthography was rejected not because of an insufficient supply of books or the absence of its chief advocate, as has been claimed, but because of a general lack of efficacy.

Even when novelty effects were uncontrolled and, hence, added to the effects due to the new writing system alone, Pronouncing Orthography was unable to produce results in T.O. which surpassed those attained when traditional orthography was used all along.

As a result, Boston's experience with Pronouncing Orthography may not be used to support the use of transitional writing systems as a means for teaching children to read traditional English orthography.

TABLE I

THE PROGRAMME OF STUDIES FOR THE PRIMARY SCHOOLS OF BOSTON FOR THE YEARS 1864, 1871, AND 1877.

| Class | 1864* | 1871+ | 1877ø |
|---|---|---|---|
| 6th | Hillard's *First Primary Reader*, to the 30th page | Hillard's *First Reader*, to the 30th page | Leigh's edition of the *Franklin Primer* |
| 5th | Hillard's *First Primary Reader*, completed (72 pp.) | Hillard's *First Reader*, completed | Leigh's edition of the *Franklin Second Reader* |
| 4th | Hillard's *Second Primary Reader*, to the 50th page | Hillard's *Second Reader*, to the 50th page | Hillard's *Franklin Second Reader*, to the 50th page |
| 3rd | Hillard's *Second Primary Reader*, completed. | Hillard's *Second Reader*, completed | Hillard's *Franklin Second Reader*, completed |
| 2nd | Hillard's *Third Primary Reader*, to the 100th page | Hillard's *Third Reader*, to the 100th page | Hillard's *Franklin Third Reader* to the 100th page |
| 1st | Hillard's *Third Primary Reader*, completed | Hillard's *Third Reader*, completed | Hillard's *Franklin Third Reader*, completed |

* Rules of the School Committee and Regulations of the Schools, Chapter 9, Regulations of the Primary Schools, in the *Annual Report of the School Committee of the City of Boston, 1864*. Boston: J. E. Farwell & Co., 1864, pp. 44-48.

+ Rules of the School Committee and Regulations of the Public Schools of the City of Boston, Chapter 12 Regulations of the Primary Schools, in the *Annual Report of the School Committee of the City of Boston, 1871*. Boston: Rockwell & Churchill, 1872, pp. 49-54.

ø Courses of Study (Primary Schools) in the *Annual Report of the School Committee of the City of Boston, 1877*. Boston: Rockwell & Churchill, 1878, pp. 260-267.

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John D. Philbrick (1876) Thirtieth Semi-Annual Report of the Superintendent, in the *Annual Report of the School Committee of the City of Boston, 1876*, Boston: Rockwell & Churchill, 1877.

John D. Philbrick (1877) Thirty-First Semi-Annual Report of the Superintendent, in the *Annual Report of the School Commitee of the City of Boston, 1877*, Boston: Rockwell & Churchill, 1878.

## 5. THE TREATMENT OF LANGUAGE SOUNDS IN THE DESIGN OF AN INITIAL TEACHING ALPHABET AND IN SPELLING WITH IT

Sir James Pitman, K.B.E.

The first stage is to ensure that the purpose of the medium has been determined precisely. In this task fresh thinking is particularly needful, for there are a number of traps for the unwary, the first being to follow the path of the phonetician and to develop a *writing* system. There have been many honourable precedents for starting from the sounds of speech and seeking to represent them visually, and it is hard to recognize that the purpose of any initial teaching alphabet is the very opposite of this: the aim is to construct not a writing system but a *reading* system which is something altogether different. The correct pair is therefore listening and reading, instead of speaking and writing.

Long ago Isaac Pitman cut himself away from this particular error and thus brought a fresh approach to the problem. The famous scholar and linguist, Professor Max Müller, wrote at the time: -

> "What I like in Mr. Pitman's system of spelling is exactly what I know has been found fault with by others, namely that he does not attempt to refine too much, and to express in writing those endless shades of pronunciation, which may be of the greatest interest to the student of acoustics, or of phonetics, as applied to the study of living dialects, but which, for practical as well as for scientific philological purposes, must be entirely ignored. Writing was never intended to photograph spoken languages: it was meant to indicate, not to paint, sounds. Language deals in broad colours, and writing ought to follow the example of language, which, though it allows an endless variety of pronunciation, restricts itself for its own purpose, for the purpose of expressing thought in all its modifications, to a very limited number of typical vowels and consonants. Out of the large number of sounds, for instance, which have been catalogued from the various English dialects, those only can be recognized as constituent elements of the language which in, and by their difference from each other convey a difference of meaning."[*]

It is perhaps difficult for the teacher without knowledge of a specialized branch of both linguistics and phonetics to appreciate the full implications of this special and unusual approach. It is helpful, however, if one has a clear understanding of the difference between the linguistic terms phoneme and diaphone. A phoneme is a *particular* sound which, in being conventionally linked in a word to a particular character, constitutes part of a writing system; a diaphone is a *generality* of differing phonemes which, notwithstanding their variety, are understood by a *listener* as having a particular meaning in that conventional language.[+] In short, a writing system is a record based on the *phonemes* of those who send *spoken* messages; a reading system one based on the *diaphones* of those who receive these spoken messages. A writing system is based on a *particular reality* which was unique for the

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[*] *Fortnightly Review*, pp. 556-79, vol. 25, April 1876.

[+] The following definitions in the *Glossary of Linguistic terminology* by Professor Mario Pei, Ph.D. Columbia University Press, New York, 1966, are also helpful:

| | |
|---|---|
| *Diaphone:* | All variants of a phoneme occurring in all the utterances of all the speakers of a language (Webster III) |
| *Phoneme:* | The minimal unit of distinctive sound-feature (Bloomfield). |

Some linguistists use the word *morphophone* but that usage is not recognized by Dr. Pei.

particular speaker on a particular occasion*; a reading system is based upon a *generalized abstraction*, postulated on the premise that all will read and understand it, - whatever their pronunciations+. This principle of the diaphone may be carried to a great length. For instance, while no one in the world *normally* would speak the word *soeldier* in the precise character-to-sound relationship of those seven characters , all would understand it when they read them as written just as they would understand any speaker were he to speak the word in his own pronunciation of all those characters.ø We read and listen as others (not we) write and speak: what differs phonographically from the reader's own speech is in fact sometimes more easily understood by all. Four readers who, when speaking, make the following pairs of word sound as homophones - *book buck; saw sore; cot caught; bomb balm* - would nevertheless have no difficulty in understanding one another in a quadrilateral conversation. Similarly they would not only have no difficulty in reading these eight words, whether printed in T.O. or in i.t.a. ( **bωk buck**; **sau sor**; **cot caut**; **bom bom**; ) but would find the reading actually easier, once the words had been mastered. This explains why an initial teaching medium not only may safely disregard dialect (or regional "accents") but ought also to aim at the generality of a reading system and avoid the particularization of a writing system.

Particularly is this true of an initial teaching reading system where the intention is to preserve all that may be preserved of that medium to which the transition will need to be made.

Moreover it is clearly impractical to vary the spellings of words to fit the multitude of different pronunciations used by readers who in fact have not as yet spoken the words they will be reading and who will, if they read them aloud, speak them differently (i.e. as their own), having clothed each word with the unique sounds of their own individuality. Those who read pass in a reading direction from characters through diaphones to their own phonemes with a degree of variety so infinite that only with a super-elaborate phonetic alphabet would it be possible to represent each variant with precision when passing from phonemes to characters in the opposite (i. e., writing)

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* For instance my pronunciations of the words *for* (in the sentence "*For* heaven's sake what did you do it *for*") would vary as to the vowel - in the first case the *schwa* and in the second the *au*: I do not myself pronounce any consonant following the vowel in either form.

+ Bernard Shaw rightly urged the trustees of his will to bear in mind:

> ". . . *that the Proposed British Alphabet does not pretend to be exhaustive as it contains only sixteen vowels whereas by infinitesimal movements of the tongue countless different vowels can be produced all of them in use among speakers of English who utter the same vowels no oftener than they make the same finger prints. Nevertheless they can understand one another's speech and writing sufficiently to converse and correspond* . . ."

Will of the late George Bernard Shaw, Clause 36.

ø It is interesting to compare and note how closely the following resemble one another when spoken quickly:

(a) **seeiŋ the œld yeer in**
(b) **seeiŋ the œl jeer in**

thus **œldier** and **œldyeer** are virtually the same and both virtually the same as **œljer** direction.

This fact is demonstrated in the following table for which I am indebted to Miss Audrey Bullard, Lecturer in Speech Training at King's College, London University, and a foremost coach in Britain to actors and actresses cast in dialect parts. She has inevitably been restricted in her attempt to portray the great variety of phonemes (even in such broad differences of easily recognizable different dialects) by the lack of discriminable characters, but the point will nevertheless be taken that in any writing system which attempts to portray the living quality of speech the printed page *must* vary with the speech.

> Table of at least twenty-three Phonemes which are covered by four of the forty Diaphones of i.t.a. The four groups of phonemes have been allocated under the four diaphones and so of the four i.t.a. characters with which, respectively, each range of phonemes are associable and representable. The characters used to represent the phonemes are (except in the case of the *t* in *postman)* those taken from the Reference Table of Phonetic Symbols or "specimen grid" of the International Phonetic Alphabet, printed in Monotype Modern 11-pt type, as published by the International Phonetic Association, University College.

| i.t.a. character as representing the diaphone | Dialect | Phonemes* |
|---|---|---|
| æ | Received Pronunciation (i.e. upper-class English) | eɪ |
| | Northern English | ɛː ɛə |
| | Scottish | e |
| | Australian | ɛɪ |
| | Cockney | aɪ |
| ie | Received Pronunciation | aɪ |
| | "Refined" | æɪ |
| | Irish (Dublin) and Lancashire | ɑɪ |
| | London Cockney | ɔɪ |
| | American (Southern) | a |
| | Yorkshire | aː |
| r and *r* | Received Pronunciation (before a vowel sound) | ɹ |
| | Scottish and French-Canadian speakers of English) | r |
| | American and Canadian | ɹ̣ |
| | French speakers of English | ʁ |
| t | Received Pronunciation (post) | t |
| | (postman) | ƫ |
| | London Cockney | t͜s |
| | " " (but not initially in stressed syllables | ʔ |
| | Indian | ʈ |
| | Australian | d |
| | American | ḍ |

* as represented by the International Phonetic Alphabet, plus the special symbol for t in "postman" by Daniel Jones in his *An English Pronouncing Dictionary*

To have even six characters for the single first syllable of, say, the word *able* would of course be both unacceptable and impracticable in the teaching or in the practice of reading, and it becomes necessary to accept for any reading system:

1. that the choice of the form must be based not on any supposed single, "right" pronunciation[*] of each and every word, since no such norm exists in the language. (Just try arguing to an American that our R.P. (Received Pronunciation) is *the* correct speech or to an Englishman that Middle West American English is to be imposed, or try suggesting to anyone but an Englishman that our *Received Pronunciation* **fau** is *the* correct pronunciation for *for:*);

2. that the correct parallel must be the corresponding listening system, that is to say that the criterion must be one of comprehension, - though tinged nevertheless with a dash of what is culturally *comme il faut*[+].

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[*] It is not true that I have based the spellings of i.t.a. on the British pronunciation called R.P. (Received Pronunciation). I have denied it frequently. It is interesting to note that M. Sylvère Monod, in his analysis of i.t.a. in *Cahiers Pédagogiques*, No. 44, Octobre 1963 (L'Orthographe), writes (p. 59):

> "Un texte en i.t.a. ressemble davantage à de l'anglais américain ou écossais (prononciation de l'R final, par ex~~a~~mple) qu'à de l'anglais d'Angleterre." e

Moreover no one with a vestige of linguistic knowledge would suggest that i.t.a. could have been based upon the standard British pronunciation (R.P.). Nevertheless this misunderstanding has persisted. It is to be hoped that this audience will henceforth be armed with a greater knowledge and recognize that the pronunciation is an all-embracing, national one that will not be found in the speech of any one speaker, or of a majority of speakers from any one language group.

Dr. J. A. Downing rightly emphasized, in his *Current Misconceptions about i.t.a.* (ELEMENTARY ENGLISH, May 1965) that "i.t.a. is an alphabet designed for *teaching beginning reading* (his italics) in any part of the English-speaking world, and for this reason i.t.a. cannot be expected to reflect regional differences of pronunciation".

However he proceeds to say,"Like the traditional orthography (T.O.) it is a standardized writing system". This is a misconception. It is not a writing system; moreover it is not and ought not to be standardized when children write in it: it is only as a reading system that standardization is relevant. T.O. is not a writing system either but a reading one. That word *either* is read without regard for the pronunciation of the reader (e. g. eether, iether and many other variants). th, th

[+] at for hat or boids for birds are discarded as culturally unacceptable variants, even if (which they do not) they were to afford reading forms more beneficial at the transition.

All that is required is that the learner should be able to read the meaning of the sentences by obtaining enough clues from what his eyes see in order to identify the words, just as in a listening system the learner should be able to hear the meaning by obtaining enough clues from what his ears receive in order to identify the words.

I have spent much time (e. g. my paper of 23 November 1960 to our Royal Society of Arts) in emphasizing that the actual sounds are subordinate to meaning, and that what the listener needs is not a reproduction of what he speaks, but a meaningful message in which the meaning in context so dominates the form that he is virtually unaware of form. An Englishman landing in New York or an American in London does not have to learn a fresh language, as would a non-English-speaking visitor, but needs only to adapt his hearing to noticeably variant phonemes within a few diaphones. In that paper I printed, using the International Phonetic Alphabet for lines 2 and 3, the following sentence both in an English pronunciation (R.P.) and in a generally accepted American pronunciation, in order to indicate the degree of difference in speech and to demonstrate the great differences in the printed forms for words which would be inevitable in any *writing* system - differences that can be avoided only by designing a *reading* system, of which T.O. as well as i.t.a. are examples:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1. | T.O. | Paul | passed | her | forty | |
| | 2. | Am. | Pol | pæst | hər | fɔrti | |
| | 3. | Eng. | Pɔ:l | pɑ:st | hə: | fɔ:ti | |
| | 4. | i.t.a. | **paul** | **pɑst** | **her** | **forty** | $a^{\phi}$ |
| | 1. | T.O. | fertile | acres | of | newly | |
| | 2. | Am. | fərtl | eikərz | ɑv | nju:li | |
| | 3. | Eng. | fə:tail | eikez | ov | nuely | |
| | 4. | i.t.a. | **fertiel** | **æcers** | **ov** | **nuely** | ≤ |
| | 1. | T.O. | grassed | pasture | not | lɔng | |
| | 2. | Am. | græst | pæstʃər | nɑt | lɑŋ | |
| | 3. | Eng. | grɑ:st | pɑ:stjuə | nɔt | lɔŋ | |
| $a^{\phi}$ | 4. | i.t.a. | **grɑst** | **pɑstuer** | **not** | **loŋ** | $a^{\phi}$ |
| | 1. | T.O. | after | Mary | got | there | |
| | 2. | Am. | æftər | Meri | gɑt | ðær | |
| | 3. | Eng. | a:ftə | Meəri | gɔt | ðeə | |
| $a^{\phi}$ | 4. | i.t.a. | **ɑfter** | **mæry** | **got** | **thær** | |

ϕ The deliberately ambivalent character

The *first* requirement of an initial teaching medium for the learning of reading is that it must not attempt to represent the speech of the reader, or even of any reader. I have reminded my readers and audiences that just as Pitman's Shorthand has proved for now over 120 years that *standard* outlines are read in a broad Scotch, Welsh, Irish, English, or American accent - and even in a Cockney or Brooklyn one - by those who have only their reading, but not their speaking, habits in common, so any reading system - T.O. as much as i.t.a. - inevitably bases itself on diaphonic, not phonetic, foundations.

This is very easily verified in that the topmost, as well as the lowest, of the above four lines will be read aloud in their own regional and even individual regional accents, by all who have a reading skill, and they will be understood by *any* listener, whatever his pronunciation, provided the pronunciation of the reader is any of those many which are effective in general communication*.

Little children, all the world over, are reading i.t.a. words in the standard i.t.a. form, because it is a reading system. They pronounce the words not merely in the pronunciation conventional in their particular linguistic environment but also in a manner peculiarly their own, so that their mothers, even though blindfolded, would be able to recognize who was reading.

James PITMAN

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Shaw, George Bernard, Will of the late. Clause 36.

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* The film directors and the television producers of the world understand this very well. They will in the ordinary course allow on the sound-track or on the air only those utterances which are easily understood and widely acceptable throughout the English-speaking world. In the world of the cinema, experts such as Miss Bullard coach the "stars" to help them to conform to just such an effective and acceptable form of communication.

## PART II - THE NORMAL CHILD

It has been frequently observed that, as an alphabet, the Initial Teaching Alphabet can be used in many ways. The messages which one may convey through it can be prepared for a wide variety of audiences. It seems quite reasonable that early programs and research with the Initial Teaching Alphabet should deal with the largest single audience of beginning readers in English - the young child who falls within the intellectually, emotionally and physically normal range. Most of the commercially available materials in i.t.a. are *most* appropriate for this group. The overwhelming percentage of studies of the effectiveness of i.t.a. as a teaching medium have been conducted using normal children, in their first attempt to learn to read English. The three sets of studies in this major section include: first, questions as to the efficacy of beginning the teaching of reading with i.t.a. (and for that matter with T.O.) at the kindergarten level in schools in the United States as opposed to the more traditional beginning in first grade. The second series deals with traditional first-grade studies usually using one or more experimental groups learning to read with i.t.a. and one or more control groups learning to read with a variety of different approaches all using T.O. The third series of papers represents reports of first grade reading experiences in Canada. These are not generally different from those in the United States.

### A. PRE-FIRST GRADE STUDIES

Many educators have been impressed with the success the alphabet has had in studies in Great Britain. Perhaps, one of the most interesting features of the educational system in Great Britain is that reading instruction begins when children are between four and five years of age (as much as two years before we typically introduce the child to formal reading instruction in the United States). The practice of beginning reading instruction at such an early age in Great Britain is quite independent of the use of the Initial Teaching Alphabet and has been the usual practice there for many years. In general, there seems to have been little change in the procedures associated with teaching beginning reading in Great Britain which can be traced directly to the introduction of i.t.a., although there is probably somewhat greater emphasis on a relatively more phonic approach.

Educators in this country have been concerned for some time with the posibility that children might begin formal reading instruction in kindergarten. There are, indeed, a number of schools throughout the country who begin formal reading at this point. The question raised by i.t.a. is, "does i.t.a. make this a more rewarding and effective educational experience?" It should be noted here, however, that i.t.a. was not designed specifically to permit or promote reading at an earlier age, or to have the reader perform with greater speed.

The two papers in this section are interesting in that they are quite similar in conceptualization and yet come to quite different conclusions. Mr. Bernard Shapiro and Mr. Robert Willford conclude that beginning reading instruction in kindergarten with i.t.a. is superior to beginning instruction in first grade with i.t.a. Drs. Harvey Alpert and Harold Tanyzer and Mrs. Lenore Sandel conclude that it is better to wait until first grade to begin formal reading instruction. The reader may note a number of differences between the two studies. The extent to which each of these may have contributed to the disparate findings cannot be determined, but the fact that the differences exist should at least be acknowledged.

First, Shapiro and Willford supplemented the *Early-to-Read* series with the *Downing Readers* and "special materials." Alpert, Tanyzer and Sandel appear to focus more heavily on the *Early-to-Read* Series supplemented with library books and transliterations of other juvenile books by the staff. Second, Shapiro and Willford include data representing performance at the end of second grade, while Alpert et al. deal exclusively with data at the end of first grade. Third, Shapiro and Willford present their statistical data in "adjusted mean grade equivalent scores," while Alpert et al. report their data using analysis of covariance with adjusted means. Finally, Shapiro and Willford did not use a comparison group of children taught in both kindergarten and first grade in T.O., while Alpert et al. did. The latter investigators found that there was also *no advantage to beginning reading instruction in kindergarten in traditional orthography*. They report, however, that children taught in i.t.a. either in kindergarten or in first grade perform at a higher level than children at a comparable grade level taught with T.O.

The apparent conflict between the two studies emphasizes the need for replication of research in the field of education in general. It illustrates, however, what the Editor considers to be one of the most supportive arguments with regard to the efficacy of i.t.a. as an initial teaching medium: that it has probably been studied more intensively, by more independent investigators, in more studies than almost any other educational innovation.

## I. I.T.A. -- KINDERGARTEN OR FIRST GRADE?

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### INTRODUCTION

The innovating principle of i.t.a. is a modified alphabet in which (i) only one form of each letter is used and (ii) the number of characters is increased from 26 to 44 so as to more closely approximate a one-to-one correspondence between the phonemes of the English language and the letters of the English alphabet. It is argued (e.g., Pitman, 1966) that the use of the more reliable and consistent i.t.a. code for beginning reading may insure success and develop the abilities needed later on for grasping the more difficult aspects of traditional orthography, and, in our view, the research to date (e.g. Downing, 1964; Mazurkiewicz, 1965) suggests that i.t.a. may indeed solve some of the traditional problems associated with beginning reading.

However, whatever the advantages of i.t.a. are as compared with other media for beginning reading instruction, there remains the important question of the appropriate time at which to begin formal i.t.a. instruction. In T.O., the teaching of reading has usually begun in the first grade, and although the Denver experiment (Brezeinski, 1964) indicated that children could benefit from learning to read at an earlier age, Sheldon, in a review of related literature (Sheldon, 1962) found that the evidence at that time did not justify the introduction of reading any earlier than the first grade level. In i.t.a., although the English experiments (Downing, 1964) reported success with i.t.a. at the infant schools (i.e., ages four-and-a-half through six), Tanyzer (1966), in an American experience, found that ". . . introducing a consistent medium such as i.t.a. to kindergarten children in a formal reading program does not result in significantly better reading and spelling achievement than that attained by children who begin formal reading instruction in first grade in i.t.a. when both groups are measured (in T.O.) at the end of first grade.

## THE STUDY

A comprehensive longitudinal study of i.t.a. was initiated by the Educational Research Council in the fall of 1965. One of the issues included in the scope of this study was the relative reading and spelling achievement of two i.t.a. groups one of which began its formal reading program in kindergarten and one of which began it only in the first grade, and it is with this question that this paper is concerned.

The two groups in question, the "kindergarten" and "first grade" groups, each consisted originally of 250 first grade children selected at random from the larger i.t.a. sample group assembled for the parent study. Both groups used the same basic set of instructional materials; they began with the Downing readers and i.t.a. Publications' Early-to-Read series, supplemented with special materials prepared at the Council, and they continued after transition with the Scott Foresman basal readers. All of the classroom teachers attended three workshops and in-service training sessions, and in addition, they received consultative help from Council personnel. In the two years of the study to date, reading and spelling achievement were measured by the language tests of the Stanford Achievement Test batteries. In the first grade, the Primary I battery, Form W, was given in i.t.a. at grade placement 1.5, and the Primary I battery, Form X, was administered in T.O. at grade placement 1.8. In the second grade, the Primary II battery, Form W, was given in T.O. at grade placement 2.8.

As with most experiments outside the laboratory, it was impossible to control all of the independent variables that might have affected the dependent variables of reading and spelling achievement. However, the analysis of covariance was used to exert "ex post facto" statistical control over three independent variables of particular interest: (i) IQ as measured by the Lorge-Thorndike Intelligence Test, Level One, Form B, given at grade placement 1.3; (ii) teacher experience in terms of years; and (iii) time spent per day in language arts activities. The means and standard deviations of these variables are given in Table I. These figures indicate that (i) there was no significant difference between the two groups in terms of IQ -

TABLE I

Covariate Means

| | 1965-66 | | | 1966-67 | | |
|---|---|---|---|---|---|---|
| | "First Gr." (N=250) | "Kind." (N=250) | t | "First Gr." (N=185) | "Kind." (N=193) | t |
| IQ (Lorge-Thorndike) | 110.31<br>(12.01)* | 110.60<br>(12.13) | .27 | - | - | |
| Teacher Experience (in years) | 2.54<br>(1.01) | 2.96<br>(1.15) | 4.42$^{+}$ | 3.15<br>(1.35) | 2.86<br>(1.14) | 2.23$^{+}$ |
| Time-Language Arts (in minutes per day) | 120.35<br>(20.34) | 124.21<br>(18.65) | 2.22$^{+}$ | 95.31<br>(10.45) | 51.46<br>(14.53) | 2.96$^{+}$ |

+ significant at the five percent level

* figures in parentheses are the standard deviations

both were at about the 73rd percentile, and (ii) although there were statistically significant differences between the groups in teacher experience and instructional time devoted to the language arts, the pattern of these differences was not consistent from year to year; thus, for example, the "kindergarten" group was "high" on these continua for the '65-'66 school year but "low" for '66-'67. It is also worth noting that (a) both groups spent considerably less time on the language arts in the second than in the first grade, and (b) between the first and second years of the study there was an attrition of approximately 25% in both sample groups.

## THE FINDINGS

The results of the covariance analyses for the first grade mid-year and end-of-the-year testings are given in Tables 2 and 3 which present the adjusted mean grade scores for each of the tests administered from the two Stanford batteries. Table 2 presents the results for the mid-year tests which were given in i.t.a. The adjusted mean grade equivalent scores indicate that after five months in the first grade, the "kindergarten" group achieved at a higher level than the "first grade" group in Word Reading, Paragraph Meaning, Vocabulary, Spelling, and Word Study Skills, i.e., in each of the five tests administered, and that these differences were statistically significant (at alpha = .05) in all of the tests except Vocabulary. In terms of the adjusted mean grade equivalent scores, the magnitude of these differences ranged from two to three school months, slightly less than the extra five months spent by the "kindergarten" group in a formal reading program.

TABLE 2

Adjusted Mean Grade Equivalent Scores

Stanford Achievement Test, Primary I, Form W+, Grade Placement 1.5

| | "Kindergarten" (N=250) | "First Grade" (N=250) | t |
|---|---|---|---|
| word Reading<br>Word Reading | 2.65<br>(91%)++ | 2.39<br>(83%) | 4.54* |
| Paragraph Meaning | 2.07<br>(74%) | 1.84<br>(61%) | 5.76* |
| Vocabulary | 2.41<br>(67%) | 2.38<br>(67%) | 1.04 |
| Spelling | 2.25<br>(75%) | 2.16<br>(70%) | 3.49* |
| Word Study Skills | 3.42<br>(89%) | 3.12<br>(88%) | 2.26* |

* significant at the five percent level

+ both groups took the test in i.t.a.

++ the figures in parentheses refer to the approximate percentage of "items passed" required to achieve the given grade equivalent score.

The adjusted mean grade equivalent scores of the first grade end-of-the-year tests are given in Table 3. Since only 8% of the "first grade" and 9% of the "kindergarten" group had completed transition at this time, these tests, given in T.O., represented a forced transition to the traditional orthography for the great majority of both groups. The results show that despite this forced transition both groups experienced some advance over their mid-year achievement in Paragraph Meaning, Spelling, and Vocabulary. Both groups, however, also experienced a lowering of their absolute level of achievement in Word Reading and Word Study Skills even though this second test series was administered after an additional three months of reading instruction. Nevertheless, the relative position of the two groups remained much the same. The "kindergarten" group still outperformed the "first grade" group in all of the tests, and again with the exception of Vocabulary, these differences were statistically significant. However, the absolute magnitude of these differences between the means were somewhat reduced from those which obtained at mid-year; in terms of raw scores, they represented a difference of only one or two test items.

TABLE 3
Adjusted Mean Grade Equivalent Scores
Stanford Achievement Test, Primary I, Form X+, Grade Placement 1.8

|  | "Kindergarten" (N=250) | "First Grade" (N=250) | t |
|---|---|---|---|
| Word Reading | 2.31<br>(80%)++ | 2.15<br>(74%) | 3.95* |
| Paragraph Meaning | 2.32<br>(79%) | 2.16<br>(74%) | 3.54* |
| Vocabulary | 2.58<br>(69%) | 2.51<br>(69%) | 1.78 |
| Spelling | 2.46<br>(80%) | 2.25<br>(70%) | 6.79* |
| Word Study Skills | 2.81<br>(84%) | 2.57<br>(80%) | 3.78* |

* significant at the five percent level
+ all pupils took the test in its T.O. form; about 8% of the first grade and 9% of the kindergarten group had completed the transition program.
++ the figures in parentheses refer to the approximate percentage of "items passed" required to achieve the given grade equivalent score.

Most of the "kindergarten" and "first grade" groups made the transition to T.O. (i.e., completed Books 6 and 7 of the Early-To-Read Series) during the first half of the second grade, but no testing was done until close to the end of the year when the subjects were at grade placement 2.8. The test scores were analyzed according to the covariance model as outlined above for the first grade data, and the appropriate adjusted mean grade equivalent scores are presented in Table 4. These second grade data show that at the end of grade two, the "kindergarten" group continued to outperform the "first grade" group in all of the tested areas and that these differences between the groups were large enough to be statistically significant at the five percent level. Indeed, in absolute terms, the differences at the

TABLE 4

Adjusted Mean Grade Equivalent Scores

Stanford Achievement Test, Primary II, Form W+, Grade Placement 2.8

| | "Kindergarten"<br>(N=193) | "First Grade"<br>(N=185) | F |
|---|---|---|---|
| Word Meaning | 3.39<br>(64%) | 3.17<br>(58%) | 5.31* |
| Paragraph Meaning | 3.52<br>(67%) | 3.04<br>(55%) | 15.01* |
| Spelling | 3.19<br>(50%) | 2.76<br>(37%) | 17.34* |
| Word Study Skills | 4.22<br>(73%) | 3.45<br>(66%) | 13.59* |
| Language | 3.45<br>(56%) | 3.98<br>(49%) | 14.55* |

* significant at the five percent level.

+ all pupils took the test in T.O.

++ the figures in parentheses refer to the approximate percentage of "items passed" required to achieve the given grade equivalent score.

end of the second grade were greater than they were at the end of the first grade ranging, in terms of mean grade equivalent scores, from two to six school months and in terms of mean raw scores from two to seven test items.

## CONCLUSION

Does the introduction of a formal i.t.a. reading program at the kindergarten rather than the first grade level result in superior levels of reading and spelling achievement as measured at grade placements 1.5 in i.t.a. and at 1.8 and 2.8 in T.O.? The analysis of the present data suggests that it does. When appropriate adjustments were made for initial group differences in IQ, teacher experience, and instructional time, the i.t.a. sample that began its reading program in kindergarten achieved in almost every case at a significantly higher level than did the i.t.a. sample which began its reading instruction in the first grade. Further study will be made of these groups as they go on to grades three, four, and five, and the resulting data will be reported as they become available.

While these results indicate that the advantages of superior reading and spelling achievement can accrue to children from an earlier start in an i.t.a. reading program, it must be acknowledged, in view of Tanyzer's (1966) findings, that these advantages are a possible but not inevitable result of such an early program. The important issue is, however, that they are possible. Therefore, it would appear that at least for the somewhat above average children from whom the present sample is representative, the outcome is dependent on the quality and nature of the i.t.a. reading program to which the children are exposed.

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## 2. THE EFFECT OF I.T.A AND T.O. WHEN BEGINNING READING INSTRUCTION IN KINDERGARTEN

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### STATEMENT OF THE PROBLEM

One of the most controversial issues in the field of reading is the question: "Should children be taught to read before the traditional starting point of first-grade?" In general, the majority of public schools in the United States answer this question directly by postponing the beginning of formal reading instruction until first-grade. In recent years, however, there has been an increasing trend to start reading instruction earlier. Thus, Mary Austin (1963), in a field study sponsored by the Carnegie Foundation, reported that more than one-quarter of the communities with kindergartens began formal reading instruction at that level. Whether it is educationally sound and in the best interest of children to introduce reading instruction at the kindergarten level is a moot question. It is generally recognized that multiple factors and conditions influence a child's performance in reading. Moreover, children exhibit a wide range of differences in learning capacity and state of readiness. Each child, in turn, is likely to show varying degrees of readiness in those factors relating to learning to read. The unique growth and maturational patterns of each child as particular needs, interests, and abilities preclude, therefore, designating an arbitrary grade or age as the most appropriate starting point for beginning reading instruction. Under ideal circumstances, reading should be taught when the child is ready for it. Following this line of reasoning, the program would be tailored to meet the instructional needs of the individual child and not vice versa. Studies by Downing (1964) in England, and Mazurkiewicz (1965) in the United States, have suggested that i.t.a. is an easier medium in which to develop reading skill than is traditional orthography. The phonic inconsistencies and irregularities of English orthography may be a source of major difficulty for the young child in learning to read. This complexity in the printed language medium makes it difficult for the young child to associate symbols and meaning, to see and remember essential differences between elements, and to associate symbols and sounds. In a more logical printed medium, however -- a medium such as the initial teaching alphabet in which there is a highly consistent phoneme-grapheme correspondence -- it may be possible to decrease the difficulty of the problem-solving task of breaking the code and thus reduce the effects of immaturity upon learning to read.

Learning to read involves the child's ability to focus his attention upon the internal letter characteristics of words. Even in teaching procedures in which the whole word is used as the stimulus, it is possible that children who learn to identify the words as a whole are aware of the letters in the word and are, therefore, capable of distinguishing other words that have similar configurations from words they have already learned. A consistent, more rational language medium such as i.t.a. may make it more feasible, less confusing, and easier for a child to focus his energies upon differentiating the characteristics of a word instead of treating it as a whole.

In current school practice the kindergarten is usually reserved for developing readiness for reading through an extension and integration of experience and language, motor, visual and auditory skills. The first-grade is primarily concerned with the teaching of reading from the standpoint of systematic and sequential instruction in word recognition and comprehension. There is a considerable body of knowledge to support such practices, not the least of which is research suggesting that the earlier the introduction of reading instruction, the greater is the probability of reading failure. Most of this research indicates that immaturity is the general factor that produces reading failure in the early years, but these studies have been based on reading in traditional orthography (Sheldon 1962).

Therefore, in this study, the major objective was to determine whether beginning reading instruction at the kindergarten level in i.t.a., which is a more regular medium, would result in significantly higher attainments in reading and spelling through the primary grades, than achievements in these areas of children who were initially taught to read in kindergarten in traditional orthography. In addition, the second major question under investigation was to determine whether beginning reading instruction in i.t.a. or T.O., at the kindergarten level, resulted in higher reading and spelling achievement through the primary grades, than that of children whose initial instruction in the two media began at the first-grade level.

Because of the unique growth and maturational patterns of each child, in the present study, kindergarten teachers were instructed to follow their normal readiness programs in the September '64 to January '65 period, except in specific situations where the teacher felt that there was no question about the child's maturity and readiness. The readiness program during this period was an informal one, designed to develop language, motor, visual and auditory experience, as well as social acclimation to classroom experience. Because of the wide variations in the readiness of individual children, teachers were informed that in the January to June period it was not necessary to place all children in a formal readiness or reading program. The teacher's judgment and consultation with the research staff were utilized in determining which children should be excluded from the more formal program of that period. For the vast majority of the kindergarten population, the readiness program usually reserved for the first part of first-grade was instituted. Those children who successfully completed this readiness program were introduced to formal reading instruction in either i.t.a. or T.O. The data on those children who were introduced to formal reading, those who were in a formal reading readiness program, and those who remained in an informal readiness program for the entire year, indicated that by the end of the year only 10%

of the children in the i.t.a. kindergartens had not been introduced to at least a formal readiness program and basal reading readiness text; while in T.O. kindergarten classrooms, only 8% of the children were not introduced to a formal readiness program. Slightly under 90% of the i.t.a. children were introduced to formal basal readiness materials or the beginning basal readers, while in the T.O. group, approximately 92% of the children were introduced to such material. In the i.t.a. kindergarten classrooms, slightly over 75% of the children had begun informal reading instruction in pre-primer materials. The proportion of children introduced to formal basal readers in a T.O. classroom approximated 45%. The following table indicates the reading levels by percentages of the i.t.a. and T.O. kindergarten children as of June 1965.

TABLE I
READING LEVELS BY PERCENTAGES OF i.t.a. AND T.O. KINDERGARTEN PUPILS

June 1965

| Reader Level | Percentage of Pupils | |
|---|---|---|
| | i.t.a.<br>N-416 | T.O.<br>N-346 |
| Book 2 (i.t.a.) | 2.7 | |
| First Reader | .3 | |
| Primer | 6.3 | 1.7 |
| Pre-Primer 2 | --- | 10.7 |
| Pre-Primer 1 | 66.8 | 32.7 |
| Readiness: Basal | 13.4 | 46.5 |
| Readiness: Non-Basal | 10.5 | 8.4 |
| | 100% | 100% |

HYPOTHESES

The following hypotheses were tested in this study:

1. Introducing a consistent medium such as i.t.a. to kindergarten children in a formal reading program will result in significantly better reading and spelling achievement than that attained by children who learn in traditional orthography in kindergarten, when both groups of children are measured at the end of first-grade.

2. Introducing a consistent medium such as i.t.a. to kindergarten children will result in significantly better reading and spelling achievement than that attained by children who begin formal reading instruction in first-grade in i.t.a., when both groups are measured at the end of first-grade.

3. Introducing reading in traditional orthography to kindergarten children will not result in significantly better reading and spelling achievement than that attained by children who are formally introduced to reading in T.O. in first-grade, when both groups are measured at the end of first-grade.

4. Introducing reading in i.t.a. to kindergarten children will result in

significantly better reading and spelling achievement than that attained by children who are formally introduced to reading in first-grade in T.O. when both groups are measured at the end of first-grade.

5. Introducing i.t.a. to first-grade children will result in significantly better reading and spelling achievement than that attained by children who begin formal reading in kindergarten in T.O. when both groups are measured at the end of first-grade.

## PROCEDURES

The present study was initiated during the 1964-65 school year. In terms of the objectives of this study, four groups of children were taught by different orthographies (i.t.a. and T.O.) at different grade levels, kindergarten and first-grade, in each of 11 school districts in Nassau County, Long Island, New York. Each school district contributed from two to eight kindergarten and first-grade classes, to which children were heterogeneously assigned. Since selection was random and the size of the total sample was large, it was assumed the sample was somewhat representative of the Long Island, New York public school population. The size of the sample may be observed in the following table:

TABLE 2

DISTRIBUTION OF i.t.a. AND T.O. KINDERGARTEN FIRST-GRADE POPULATIONS

| | i.t.a. | | T.O. | |
|---|---|---|---|---|
| | Sept. 1965 | May 1966 | Sept. 1965 | May 1966 |
| Kindergarten Instruction | 430 | 410 | 345 | 332 |
| First-Grade Instruction | 308 | 298 | 266 | 248 |

The sample was composed of four groups as follows:

Group A: Kindergarten -- Beginning reading instruction in T.O.
Group B: Kindergarten -- Beginning reading instruction by i.t.a.
Group C: First-Grade -- Taught to read in T.O. with initial instruction at a first-grade level.
Group D: First-Grade -- Taught to read by i.t.a. with initial instruction in reading at a first-grade level.

At the completion of the first year of this study each of these four groups was moved up one grade. The instruction given to the administrative officers of the schools was to move each class as a unit to the following grade. Since evaluation of reading progress by standardized testing was impossible at the end of kindergarten, all measurement comparisons were at the end of first-grade. Thus, the four groups being evaluated during the current year of this study had completed first-grade and second-grade respectively.

The administrative officers in each of the participating school districts were instructed to ask for first-grade and kindergarten teachers who would volunteer for participation in a reading study. Those teachers who volunteered were not to know whether their class would be instructed in i.t.a. or T.O. From those teachers volunteering for the study, principals were instructed to match teachers on the basis of three criteria which were:

(1) Number of years of teacher experience; (2) Level of training;
(3) Principal's evaluation of teacher competence.

All teachers who volunteered attended a three-day workshop designed to provide a theoretical basis and practical application of the approved methods of teaching reading in T.O. and in i.t.a. Separate sessions were held for kindergarten and first-grade teachers. Following the workshop, teachers were randomly assigned to T.O. or i.t.a. classes and the groups so selected were examined in terms of the criteria for selection. There were no significant differences among the two groups in number of years of teacher experience, the level of training, or principal's evaluation. In order to further control the teacher-variable, the teachers were instructed to keep a log of their instructional time. The log contained the following information: (1) time spent in each activity, (2) type of learning activity -- reading skill or related activity, (3) classroom organization. Again, no significant differences were found in the logs between the T.O. and i.t.a. teachers in any of the three above areas. The logs were validated by research officers assigned to each school who spent one week intensively observing in each teacher's classroom and keeping their own log of the teacher's instructional time. The logs prepared by the research staff were compared with the teacher's own reports and the results verify the accuracy of the teacher's reports.

The instruments used to measure the variables of the study were the Pintner-Cunningham Primary Test for Intelligence and the Stanford Achievement Test Primary Battery I Form X. The tests were administered by the research officers who were trained in such administration, and all tests were scored and re-scored by the Hofstra research assistants. All tests requiring reading were administered in conventional orthography.

The groups learning to read in T.O. were taught by varying methods, depending upon the classroom teachers' preferences. The teachers were allowed to utilize procedures of teaching that were generally approved by language arts specialists. Thus, teachers instructing in T.O. could use a basal or multibasal approach, or could use an experience approach utilizing library books as the core of their instructional program. The type of classroom organization used by a teacher was a matter of individual preference, as long as the type of organization was designed to differentiate instruction within the class. Since teachers were chosen on the basis of their competence, as long as proper differentiation of instruction occurred, all materials printed in T.O. which the teacher believed increased teaching effectiveness were approved. The i.t.a. classes were taught to read using a series of graded materials printed in i.t.a. entitled the *Early-to-Read i/t/a/ Series*. This series consists of a set of books beginning with readiness material, six readers, four workbooks and an alphabet book which accompanies the readers, a set of teacher's manuals, and large alphabet and word cards. In addition, approximately 75 British and American library books printed in i.t.a. were available. A number of juvenile books were transliterated into i.t.a. by the Hofstra staff. Transliterations were printed in the form of inserts which were pasted over the pages of the regular T.O. edition. Teachers were allowed to use any of these supplementary materials in terms of their own preferences. Within each classroom (i.t.a. or T.O.) a minimum of 50 library books was available for pupil use.

## STATISTICAL ANALYSIS

The purpose of the statistical analysis is to determine not only the effect of medium (i.t.a. or T.O.) upon reading achievement, but also the effect of introducing reading instruction at the kindergarten level. In order to accomplish this analysis, the first step involved a regression analysis to test for linearity. A bivariate table was prepared utilizing intelligence as one variable and reading achievement as the second variable, and a Chi-square test of linearity was performed. Since the result of this analysis indicated that linearity was a fact, this made it possible to analyze the data, utilizing an analysis of covariance with intelligence as the covariate, and an analysis of variance. Since the analysis of covariance is a more sensitive test and utilized each child as an individual observation, small differences between the groups could prove significant. Thus, a more conservative test was also applied, utilizing a 3 x 2 analysis of variance design. This was accomplished by placing the I.Q.'s of the total sample of all of the children contained in the study, including both i.t.a. and T.O. children, in a frequency distribution. I.Q. groups were then divided into three equal categories labeled high, average and low. In cases where the dividing point would have made groups unequal in size, children whose I.Q.'s were at the dividing point were randomly assigned to one of the two groups they fell between. In addition, in the analysis of variance, the classroom rather than individual children were utilized as the unit of observation. The rationale for this procedure was that all the subjects have shared a common experience and, hence, did not qualify as individual, independent observations. This procedure reduced the degrees of freedom considerably and, hence, differences on the dependent variables would have to be considerably greater in order to be significant. The dependent variables utilized in the analysis of variance were the subtest scores in reading and spelling of the Stanford Achievement Test Primary I. The response to be analyzed was the mean of all subjects in each class who fell into the appropriate I.Q. groups.

## ANALYSIS OF RESULTS

TABLE 3

Analysis of Covariance Table of Adjusted Means for Each Reading Achievement Subtest of i.t.a. and T.O. Children with Kindergarten Reading Instruction at End of First-Grade

| Subtest | Word Reading | Paragraph Meaning | Word Study Skills | Spelling |
|---|---|---|---|---|
| i.t.a. | 24.81** | 22.70 | 40.75* | 9.77 |
| T.O. | 22.51 | 21.80 | 39.57 | 12.73** |

* Significant at .05 level
** Significant at .01 level

TABLE 4

Analysis of Covariance Table of Adjusted Means for Each Reading Achievement Subtest for the i.t.a. Groups With and Without Kindergarten Reading Instruction at End of First-Grade

| Subtest | Word Reading | Paragraph Meaning | Word Study Skills | Spelling |
|---|---|---|---|---|
| i.t.a. with Kindergarten Reading | 24.98 | 22.93 | 40.99 | 9.90 |
| i.t.a. without Kindergarten Reading | 24.26 | 22.94 | 41.70 | 9.73 |

* Significant at .05 level
** Significant at .01 level

TABLE 5

Analysis of Covariance Table of Adjusted Means on the Reading Achievement Subtests for the First-Grade T.O. Groups With and Without Kindergarten Reading Instruction at End of First-Grade

| Subtest | Word Reading | Paragraph Meaning | Word Study Skills | Spelling |
|---|---|---|---|---|
| T.O. with Kindergarten Reading | 22.08 | 21.05 | 38.87 | 12.37 |
| T.O. without Kindergarten Reading | 22.59 | 22.74* | 40.17 | 12.66 |

* Significant at .05 level
** Significant at .01 level

TABLE 6

Analysis of Covariance Table of Adjusted Means on the Reading Achievement Subtests for the First-Grade i.t.a. Group With Kindergarten Reading Instruction and the T.O. Group Without Kindergarten Reading Instruction at End of First-Grade

| Subtest | Word Reading | Paragraph Meaning | Word Study Skills | Spelling |
|---|---|---|---|---|
| i.t.a. with Kindergarten Reading | 24.88** | 22.79 | 40.85 | 9.83 |
| T.O. without Kindergarten Reading | 22.86 | 23.17 | 40.50 | 12.81** |

* Significant at .05 level
** Significant at .01 level

TABLE 7

Analysis of Covariance Table of Adjusted Means by Reading Subtest for the T.O. Group With Kindergarten Reading Instruction and the i.t.a. Group Without Kindergarten Reading Instruction at end of First-Grade

| Subtest | Word Reading | Paragraph Meaning | Word Study Skills | Spelling |
|---|---|---|---|---|
| i.t.a. without Kindergarten Reading | 23.98** | 22.52 | 41.35** | 9.56 |
| T.O. with Kindergarten Reading | 22.25 | 21.29 | 39.11 | 12.49** |

* Significant at .05 level
** Significant at .01 level

An examination of the adjusted means in Table 3 indicates that introducing reading at the kindergarten level in i.t.a. results in significantly better achievement in word reading and word study skills, than introducing reading at the kindergarten level in T.O. There were no differences between the i.t.a. and T.O. groups in paragraph meaning but there was a significant difference in favor of the T.O. group in spelling. Table 4 illustrates the effect of introducing reading at the kindergarten level in i.t.a. in comparison to introducing reading at the first-grade level in i.t.a. As can be seen in Table 4, no significant differences resulted in any of the four subtests. This suggests that when children are measured at the end of first-grade, beginning reading instruction at levels earlier than first-grade does not have significantly beneficial results. An examination of Table 5, which indicates the relative achievement of those children who were instructed in T.O. at the kindergarten level in comparison to those children who were instructed in T.O. beginning at a first-grade level, also suggests no benefit to early reading instruction. As can be seen in Table 5, no significant differences result in favor of the group that began reading instruction at the kindergarten level. The only area in which there was a significant difference (paragraph meaning) the difference was in favor of the T.O. group that did not receive reading instruction at the kindergarten level. Although the differences in the other areas are not significant, it should be noted that the means are slightly higher for the group that did not receive kindergarten reading instruction. In Table 6, we had a comparison of the effect of introducing reading at a kindergarten level in i.t.a., in comparison to the introduction of reading at a first-grade level in traditional orthography. The only two areas in which a clear advantage was shown was word reading and spelling, in word reading, the i.t.a. children were significantly higher and in spelling, the T.O. group was significantly higher. Again, this does not suggest any clear-cut advantage for beginning reading instruction at levels earlier than first-grade. As the results in Table 7 are similar to those obtained in Table 6; i.e., the i.t.a. group that did not receive instruction at a kindergarten level was significantly higher in word reading than was the T.O. group that had received instruction in kindergarten. This seems to reflect that it is the medium rather than the point at which reading instruction began that is the more significant aspect of the improved performance in the word reading area. Also, in Table 7, it can be observed that the T.O. group was significantly better in spelling but this was true in Table 6 as well which again suggests that the time at which reading instruction began was not the significant factor in spelling but that it was the medium of instruction that was the more critical aspect.

Since the analysis of covariance is a more sensitive test than the analysis of variance, areas in which significant differences did not occur in the analysis of covariance were not repeated by the analysis of variance procedure. The analysis of covariance comparisons, however, between the i.t.a. and T.O. groups who have received early reading instruction at the kindergarten level suggested significantly higher achievement in favor of the i.t.a. group. The results were re-tabulated by an analysis of variance, using the classroom as the unit of observation, rather than the individual child. This more conservative test would suggest whether there is a practical, as well as statistical, significant difference between the i.t.a. and T.O. groups receiving early reading instruction.

As can be seen in Table 8, the means for the i.t.a. group that had received kindergarten reading instruction when measured at the end of first-grade, suggests significantly higher achievement in word reading, paragraph meaning and word study skills in favor of the i.t.a. group. The F ratios computed for each of these subtests verify the inspection of the means and indicated that in word reading the difference was significant in favor of the i.t.a. group at the .01 level, and in paragraph meaning and word study skills at the .05 level. The difference in spelling in favor of the T.O. group which was observed in each of the analyses of covariance again suggests T.O. children spell better at the end of first-grade regardless of the time at which reading instruction began. The difference observed in Table 8 was significant at the .05 level.

TABLE 8

Anova Table of Means for i.t.a. and T.O. Groups With Kindergarten Reading Instruction by Category of Intelligence at end of First-Grade

| Subtest | Word Reading | | | Paragraph Meaning | | | Word Study Skills | | | Spelling | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I.Q. | Low | Aver. | High | Low | Aver. | High | Low | Aver. | High | Low | Aver. | High |
| i.t.a. with Kinder-garten Reading | 21.09 | 26.09 | 27.59 | 18.69 | 24.47 | 27.40 | 37.00 | 42.41 | 43.87 | 8.04 | 10.08 | 11.96 |
| T.O. with Kinder-garten Reading | 19.45 | 21.92 | 24.12 | 17.71 | 20.38 | 25.20 | 33.53 | 39.09 | 41.54 | 9.90 | 12.32 | 13.73 |

## SUMMARY AND CONCLUSIONS

An examination of the effect of medium of instruction (i.t.a. or T.O.) strongly suggests that the group of children instructed in the initial teaching alphabet attained a significantly higher level of reading achievement than those groups instructed in traditional orthography. This was true whether the reading was introduced on a formal basis at the kindergarten level or whether reading was initiated at the first-grade level on a formal basis. When both groups of children were introduced to reading at the kindergarten level, the group instructed in i.t.a. exhibited significantly higher achievement at the end of first-grade in word recognition, paragraph meaning, and in word study skills. The more striking of these three reading subtests was word recognition in which the i.t.a. group was significantly better than the group instructed in traditional orthography by a very large margin. In word study skills and in paragraph meaning, the superiority of the i.t.a. group was slightly significant at the .05 level. The one notable exception to the superiority of the i.t.a. groups was in the area of spelling where, at the end of first-grade, it was found that the T.O. children were consistently better in spelling whether they began reading instruction at a kindergarten or first-grade level.

The effect of initiating formal reading instruction at the kindergarten level does not appear to be significant. This was true whether the kindergarten instruction was in the i.t.a. medium or in traditional orthography. When the two i.t.a. groups were compared, no significant differences in achievement resulted between the i.t.a. group that had received formal reading instruction at the kindergarten level and the i.t.a. group that had *not* received instruction at the kindergarten level. Hence, it would appear that beginning formal reading instruction at the kindergarten level, utilizing the i.t.a. medium, was not advisable on an overall basis. Despite this, there were of course, some children who began reading instruction at the kindergarten level who benefitted greatly from this instruction. When traditional orthography is utilized as the medium of instruction, and formal reading instruction begins at the kindergarten level, the results are somewhat similar to those obtained between the i.t.a. group *with* and *without* kindergarten instruction. Again, for those children who began formal reading in traditional orthography at the kindergarten level, no significant change was discovered at the end of first-grade when the reading achievement of this group was compared to that of a group of children who began reading instruction in traditional orthography at the first-grade level. This was true in both word reading and in word study skills. A significant difference (.05 level of confidence) was found for the paragraph meaning subtest, but in this case it was the group that had begun reading instruction at the first-grade level on a formal basis whose achievement was significantly higher. Hence, as was true for the i.t.a. group, initiating formal reading instruction at the kindergarten level in T.O. does not seem to produce beneficial results in terms of reading achievement at the conclusion of first-grade.

Beginning reading instruction on a formal basis at the kindergarten level utilizing i.t.a. as the medium produced significantly higher achievement in word recognition by the end of first-grade than that attained by the group instructed in T.O. for whom formal reading instruction began in first-grade. The comprehension and word study skills subtests for these two groups suggests that the comprehension and word analysis was relatively similar. When reading instruction is begun at a kindergarten level in T.O., and reading instruction is begun in i.t.a. at the first-grade level, children instructed in i.t.a. were significantly better in word recognition and analysis but not in comprehension.

Again, the data suggests that instructing children in the i.t.a. medium produces better word recognition and word analysis regardless of the time at which reading instruction is initiated. Initiating reading instruction at a kindergarten level, however, does not produce significantly better achievement whether the instruction takes place in the initial teaching alphabet or in traditional orthography. The results seem to indicate that although reading can be taught successfully to five-year-olds, the proportion of children who achieve some degree of success in reading is extremely small. For those children who are instructed in traditional orthography at the kindergarten level, only 2% of the children were reading at a primer level. None of the children who were instructed in T.O. were reading at levels higher than primer. Although more children in the five-year-old age group achieve some degree of reading success when instructed in the initial teaching alphabet, the percentage of successful readers was still quite small. Only 3% of the i.t.a. children were reported by their teachers as reading at a first-reader level or higher at the conclusion of kindergarten. Thus, it would appear that the i.t.a. materials were easier for children at the kindergarten level and more of the children achieved reading success than was true in traditional orthography; that in both cases the proportion of children who were reading successfully at primer levels or higher was so small that the desirability of initiating reading instruction at the kindergarten level for all children is strongly subject to doubt. This is further verified by the fact that at the end of first-grade no significant differences were found in favor of those children who had begun reading instruction at age 5 rather than at the normal age 6.

As determined from the analysis of variance, intelligence would not seem to be a major factor in determining whether the i.t.a. or the T.O. medium would be more effective for instruction. It was generally true that children instructed in the initial teaching alphabet were significantly better in word recognition than word analysis at all levels of intelligence. Thus, it would not appear that intelligence should be a major determinant in deciding upon the medium of instruction for a child in beginning reading. It may be concluded therefore, that:

1. Introducing a consistent medium such as i.t.a. to kindergarten children in a formal reading program does result in significantly better word recognition and word analysis than that attained by children who learn in traditional orthography in kindergarten when both groups of children are measured at the end of first-grade.

2. Introducing a consistent medium such as i.t.a. to kindergarten children in a formal reading program does not result in significantly better comprehension and does result in significantly poorer spelling achievement than that attained by children who learned in traditional orthography in kindergarten when both groups are measured at the end of first-grade.

3. Introducing a consistent medium such as i.t.a. to kindergarten children does not result in significantly better reading and spelling achievement than that attained by children who begin formal reading instruction in first-grade in i.t.a. when both groups are measured at the end of first-grade.

4. Introducing a reading in traditional orthography to kindergarten children does not result in significantly better reading and spelling achievement than that attained by children who are formally introduced to reading in traditional orthography in first-grade when both groups are measured at the end of first-grade. In actual fact, the group that had not received kindergarten reading instruction was significantly higher in comprehension achievement than the group that had received kindergarten instruction in traditional orthography.

5. Introducing reading in i.t.a. to kindergarten children results in significantly higher word recognition than that attained by children who are formally introduced to reading in first-grade in T.O. when both groups are measured at the end of first-grade.

6. Introducing reading in i.t.a. to kindergarten children does not result in significantly better comprehension or word analysis than that attained by children introduced to reading in first-grade in T.O.

7. Introducing reading in i.t.a. to kindergarten children results in significantly poorer spelling achievement than that attained by children formally introduced to reading in first-grade in T.O.

8. Introducing i.t.a. to first-grade children results in significantly better word recognition and word analysis than that attained by children who begin formal reading in kindergarten in T.O. when both groups are measured at the end of first-grade.

9. Introducing i.t.a. to first-grade children does not result in better comprehension than that attained by children who begin formal reading in kindergarten in traditional orthography. The spelling achievement of children who begin formal reading instruction in kindergarten in traditional orthography is significantly better than the spelling achievement of children introduced to reading for the first time in first-grade in i.t.a.

To summarize these results, it would appear that i.t.a. is a more effective medium in developing word recognition and word analysis skills. Comprehension is slightly affected by the medium of instruction but there does not seem to be a strong superiority for the i.t.a. instructed children. There is also a strong suggestion that formal reading instruction should not begin at a formal basis at the kindergarten level with all children, and that the present practice of initiating formal reading instruction at first-grade is preferred. If reading instruction is introduced at the kindergarten level, this should be done on the basis of selecting those few children for whom the chances of success are greatest and that i.t.a. would be a preferred medium for such instruction.

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## B. FIRST GRADE STUDIES

The papers in this section represent studies typical of most of the research that has been conducted with i.t.a. thus far, (i.e., studies of beginning reading in first grade in the United States). For the most part, these studies are comparable in quality with most educational research. The Editor has written a critique of i.t.a. research (Block, 1966) and various issues of *the i.t.a. Foundation Report* have contained systematic abstracts of i.t.a. research studies including citation of the original reference, descriptions of subjects involved, the reading materials used, characteristics of the teachers in the study, the evaluation instruments used, the study duration, and a summary of results.
tively complete bibliography of i.t.a. research at the first grade level at the conclusion of this introduction. The list includes only those studies which attempted to use control groups, and is as exhaustive as the i.t.a. Foundation files permit.

Four of the papers in this section are quite traditional. Three of them present relatively detailed statistical tables, and the fourth (by Dr. Eleanor Kirkland) describes her results without presentation of statistical data.* The paper by Dr. Robert McCracken presents data over a two-year period. The studies by Dr. Robert Hayes and Mr. Richard Wuest and the one by Dr. Kirkland present results at the conclusion of three years of instruction, while Dr. Albert Mazurkiewicz' data covers a four-year span of instruction.

The final paper in the series by Dr. Richard Montesi is based on a three-year research project. He presents research results, and in addition, raises a series of questions about i.t.a. He suggests that i.t.a. is probably best for those who would be successful in either medium. Once again, the reader should be reminded that relatively little research has been conducted as to the most appropriate methods for separate intellectual sub-groups; the pace at which it should be presented; or the most appropriate difficulty level of the material. Dr. Montesi's paper also raises the question of how one maintains early gains with i.t.a. Elsewhere in these proceedings this problem is discussed by Dr. Rebecca Stewart. Dr. Montesi also emphasizes the role of writing in the general problem of "language development." This issue is dealt with in detail in papers in this volume by both Mr. George Riemer and Mrs. Lenore Sandel.

The interested reader may wish to pursue other references of beginning reading i.t.a. studies listed below.

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* Detailed statistical data for Dr. Kirkland's study is presented in her doctoral dissertation entitled, *The effect of two different orthographies on beginning reading,* which may be obtained from the University of California at Berkeley.

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## 1. A TWO-YEAR LINGITUDINAL STUDY TO DETERMINE THE ABILITY OF FIRST GRADE CHILDREN TO LEARN TO READ USING THE EARLY-TO-READ I.T.A. PROGRAM

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Mazurkiewicz and Tanyzer (1963) in 1963 published a completely new set of i.t.a. readers and workbooks for teaching reading. Mazurkiewicz is directing a six-year longitudinal study using his own materials, the *Early-to-Read i/t/a Program,* in Bethlehem, Pennsylvania.

It seemed desirable to check the value of the *Early-to-Read i/t/a Program* independent of its author, since it was the only i.t.a. program available in the United States in 1964 although three or more programs were available in England in September 1964.

PURPOSE:

The primary purpose of this study was to evaluate the *Early-to-Read i/t/a Program.* The secondary purposes were to evaluate the individual's rate of learning to read and to examine the relationship of intelligence to success in learning to read under the *Early-to-Read i/t/a Program.*

INITIATION OF THE i.t.a. TEACHING EXPERIMENT:

The i.t.a. project was initiated by Mr. Lawrence Ames, Principal in the Mukilteo School District #6. Mr. Ames had been assigned to the Rose-Hill Elementary School for the 1964-65 school year. It seems important to note that this was not an experiment initiated by teachers. The Rose-Hill Elementary School houses two first grades. Both first grade teachers expressed a willingness to cooperate in the experiment. The experiment was designed and a summer meeting was held on August 23, 1964 to explain the program to parents.

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* This research was conducted jointly by Mukilteo School District #6, Mukilteo, Washington, Mr. J. O. Simpson, Superintendent of Schools, and Western Washington State College. This research was funded through the Research Division of the Office of the Superintendent of Public Instruction of the State of Washington. A complete report is on file in that office.

THE SUBJECTS:

Sixty-one first grade pupils entered the Rose-Hill Elementary School in September of 1964. Thirty-four of these pupils were assigned randomly to the experimental i.t.a. group and twenty-six of the pupils were assigned randomly to the traditionally taught control group. The larger number of children was assigned to the i.t.a. group because it was felt that pupils entering the Rose-Hill Elementary School during the year would need to be placed in the traditionally taught classroom and that by the end of the school year the classes would be approximately the same size.

Three first grade classes were chosen randomly from the remaining 10 first grades in the Mukilteo School District #6 to serve as a second control group. This group is referred to in this report as the *sub-control group*. These classes received only initial readiness testing and final reading achievement testing at the end of grades one and two.

The two Rose-Hill teachers were assigned randomly to the i.t.a. experimental class and the traditional orthography (T.O.) control class. The children in the i.t.a. experimental class and the T.O. control class remained as separate classes during second grade.

THE TESTING PROGRAM:

The following tests were used. Figure I summarizes the tests and their schedule of administration.

1. *The Pre-Reading Test* by Sheldon and others (1963) was used to evaluate reading readiness in September 1964. The test was administered in the experimental, control, and sub-control groups, providing a measure of auditory discrimination (rhyming words and initial consonants), visual discrimination of word form, comprehension of material read to the pupil and a perceptual motor tracing test.

2. A letter knowledge test of the alphabet (in both capital and lower case letters) was administered individually to each child in the experimental and control groups in September of 1964.

3. The *Wechsler Intelligence Scale for Children* (1944) was administered to each child in the experimental and control groups during October and November.

4. The *Gray Oral Reading Test Form D* (Gray and Robinson, 1963) was administered in December of 1964 to each child in the experimental and control groups. The i.t.a. class read from transliterated materials and the control group read from T.O.

5. The word lists for measuring the ability to pronounce words in isolation from the *Standard Reading Inventory*, Forms A and B (McCracken, 1966) were administered in December of 1964 to the experimental and control groups. Form A was administered in T.O. to both groups; Form B was administered in i.t.a. to both groups.

6. Form C of the *Gray Oral Reading Test* (Gray and Robinson, 1963) was administered at the end of March 1965 to each child in the experimental and control groups. The children in the experimental group read from transliterated materials and the children in the control group read from T.O.

7. The two word lists from Forms A and B of the *Standard Reading Inventory* (McCracken, 1966) were administered again in March of 1965. Form A was administered in T.O. to each child in the experimental and control groups and Form B in i.t.a. to each child in the experimental class and in T.O. to

each child in the control group.

8. Form B of the *Standard Reading Inventory* (McCracken, 1966) was administered in its entirety at the end of May 1965 to each child in the experimental class, to each child in the control group and to each child in a group randomly selected from the sub-control group. The test was printed in i.t.a. for the experimental group and in T.O. for the control group and the randomly selected group from the sub-control group.

9. The 1964 *Stanford Achievement Tests, Form W, Primary I* (Kelly and others, 1964) were administered during the last week of May 1965 to all children in the experimental, control, and sub-control groups. The tests were printed in T.O. for all groups. The complete battery was administered: tests in word reading, paragraph meaning, vocabulary, spelling, word study skills, and arithmetic. The children in the experimental class were told to spell in both i.t.a. and T.O. if they could, and the pupils were encouraged to attempt to spell the words in T.O. The scoring of the spelling test was done according to T.O. spelling.

10. Forms B and D on the *Gray Oral Reading Test* (Gray and Robinson, 1963) were administered in September 1965 to each child in the experimental and control groups. Form B was administered in i.t.a. to both groups, and Form D in T.O. to both groups. The purposes of this were to evaluate transfer and to evaluate loss or gain over the summer.

11. Form C of the *Gray Oral Reading Test* (Gray and Robinson, 1963) was administered at the end of January of 1966. This was administered in T.O. to both experimental and control groups.

12. Form A of the *Standard Reading Inventory* (McCracken, 1966) was administered at the end of second grade (May 1966) to each child in the experimental class, to each child in the control group, and to each child in the randomly selected sub-control group who was tested at the end of grade one. All the testing was done in T.O.

13. The *Stanford Achievement Tests, Form W, Primary II* (Kelly and others, 1964) were administered during the last week of May 1966 to all children in the experimental and control and sub-control groups. The tests were administered in T.O. for all groups.

14. A time study of pupil activity was conducted throughout grade one in the experimental and control groups. The observers were asked to record in minutes the amount of time a child spent during the day in reading, in writing, in phonics, in arithmetic, and in miscellaneous activities. They were asked to divide each category into pupil-work or teacher-work.

STATISTICAL TESTS USED:

An analysis of variance was used to analyze the results of the *Pre-Reading Test*, the *WISC*, and the *Stanford Achievement Tests*. A t-test was used to check the significance of differences between groups on the *Stanford Achievement Tests*, and the grade two results of the *SRI*.

The *Wilcoxon Two Sample Test* (Hodges and Lehman, 1964) was used to analyze the results of the alphabet knowledge test and the *Gray Oral Reading Paragraph Tests*. A chi-square test of independence (Siegel, 1956) was used to analyze the grade one results of the *SRI* among the three groups and the error analysis of the *SRI* at the end of grade two. A sign test (O'Toole, 1960-64) was used to analyze the results of the *SRI* word list tests within the control and experimental classes.

FIGURE I

TIME SCHEDULE FOR TESTING

| Dates | Test | Group and Orthography<br>Experimental | <br>Control | <br>Sub-Control |
|---|---|---|---|---|
| Sept. 1964 | | × | × | |
| to<br>June 1965 | Time Study of Pupil Activity | × | × | |
| Sept. 1964 | Pre-Reading Test, Form I | × (T.O.) | × (T.O.) | × (T.O.) |
| | Letter Knowledge Test | × (T.O.) | × (T.O.) | |
| Oct. 1964 | WISC | × | × | |
| Dec. 1964 | Gray Oral Reading Test, Form D | × (i.t.a.) | × (T.O.) | |
| | SRI Words in Isolation, Form A | × (T.O.) | × (T.O.) | |
| | SRI Words in Isolation, Form B | × (i.t.a.) | × (i.t.a.) | |
| March 1965 | Gray Oral Reading Test, Form C | × (i.t.a.) | × (T.O.) | |
| | SRI Words in Isolation, Form A | × (T.O.) | × (T.O.) | |
| | SRI Words in Isolation, Form B | × (i.t.a.) | × (T.O.) | |
| May 1965 | Standard Reading Inventory, Form B | × (i.t.a.) | × (T.O.) | × (T.O.)* |
| | Stanford Achievement Tests, Form W | × (T.O.) | × (T.O.) | × (T.O.) |
| Sept. 1965 | Gray Oral Reading Test, Form B | × (i.t.a.) | × (i.t.a.) | |
| | Gray Oral Reading Test, Form D | × (T.O.) | × (T.O.) | |
| Jan. 1966 | Gray Oral Reading Test, Form C | × (T.O.) | × (T.O.) | |
| May 1966 | Standard Reading Inventory, Form Form A | × (T.O.) | × (T.O.) | × (T.O.)* |
| | Stanford Achievement Tests, Form W | × (T.O.) | × (T.O.) | × (T.O.) |

* Group here tested was random sample of Sub-Control Group.

INSTRUCTIONAL PROGRAMS:

The i.t.a. teacher was instructed to follow the *Early-to-Read Series* manuals as closely as possible. She was judged to be successful in doing this, although admittedly such a judgment is subjective. The teacher of the control group used the *Ginn Basic Reading Series*.

Beginning books which were available in i.t.a. print were purchased for the i.t.a. classroom library in addition to the *Early-to-Read i/t/a Series*. Approximately 160 beginning reading trade books were transliterated for the experimental group. A T.O. edition of each was placed in the classroom library for the control group.

## RESULTS:

The results of the first grade testings were reported previously (McCracken, 1966) so they are not repeated here, although they are discussed later and used in drawing conclusions.

A Wilcoxon analysis was made of the *Gray Oral Reading Test* scores obtained in September of second grade. There was no significant difference between the experimental and control groups in the total score achieved on Form D administered in T.O. ($p=0.52$.). At paragraph level 4 there was a significant difference in errors made ($p=0.05$) and time of reading ($p \leq 0.01$). The performance of the i.t.a. group was better.

There was no significant difference ($p=0.05$) between the performance of the experimental pupils when reading from i.t.a. or T.O. This would indicate that transfer had been obtained; however, this seemed to be a regression for the experimental group from their June i.t.a. reading rather than a gain in performance when reading from T.O.

There were significant differences when the T.O. taught children were asked to read in i.t.a. The T.O. children were significantly poorer ($p<0.01$) than the i.t.a. children when reading from i.t.a. and the T.O. children were significantly poorer ($p<0.01$) when reading from i.t.a. than they were when reading from T.O. This would have been predicted. It is interesting to note that five or six of the T.O. taught children were able to transfer without loss to i.t.a. in the September reading. These were pupils who were reading well in T.O.

A Wilcoxon analysis was made of the *Gray Oral Reading Test* scores, Form C, obtained in January at the middle of second grade. This was administered in T.O. There were no significant differences in any subtest scores. There was no significant difference in the total performance ($p=0.42$).

Table I gives the results of the *Stanford Achievement Test Primary II, Form W* administered at the end of second grade to the experimental, control, and sub-control groups. The i.t.a. taught pupils achieved the highest average sub-test scores on all eight tests. The median grade level achieved on the *SAT* was 3.20 for the experimental group, 2.70 for the control group, and 2.55 for the sub-control group.

Table II gives a summary of the Analysis and Variance of results of the *Stanford Achievement Tests* for the three groups. The analysis of variance indicated significant differences ($p<0.01$) among the groups for six of the eight tests of the *Stanford Achievement Tests*. There were significant differences on the test of *word meaning*, *paragraph meaning*, *word study skills*, *language*, *arithmetic computation*, and *arithmetic concepts*. There were no significant differences ($p \leq 0.05$) in *science and social studies concepts or spelling*.

Table III gives a t-Test Analysis of the differences between groups for the results of the *Stanford Achievement Tests* at the end of grade two. There were no significant differences ($p \leq 0.05$) between the scores of the experimental and control group except in *Arithmetic Concepts* ($p<0.01$). There were significant differences between the experimental and sub-control group in word meaning ($p<0.05$), paragraph meaning ($p<0.01$), word study skill ($p<0.01$), language ($p<0.05$), and arithmetic concepts ($p<0.01$). There were no significant differences ($p \leq 0.05$) between the scores achieved by the experimental and sub-control groups in science and social studies concepts, spelling, and arithmetic computation.

There were no significant differences ($p \leq 0.05$) between the scores achieved by the control and sub-control groups on the eight tests of the *SAT* administered at the end of grade two.

The instructional reading levels as measured by the *Standard Reading Inventory* at the end of second grade are reported in Table IV. The experimental group achieved a maximum instructional reading level of 3.1 which would place them as ready to begin the 3-1 basal book. The control group achieved a maximum instructional level of 2.5 which would place them as ready to begin the 2-2 reader. The sub-control group achieved a maximum instructional grade level of 2.0 which would place them as ready to begin the 2-1 book. The minimum instructional level achieved by the experimental pupils was 2.0. The minimum instructional level achieved by the control pupils was 1.5 and the minimum instructional level achieved by the sub-control group was 1.3.

Table V reports the t-test analysis for significance of differences between the means of the experimental, control and sub-control groups on the *Standard Reading Inventory* at end of grade two. There were significant differences ($p \leqq 0.01$) between the experimental and sub-control groups on both maximum and minimum instructional levels. There were no significant differences ($p \leqq 0.05$) between the experimental and control group or between the control and sub-control group on maximum and minimum instructional levels.

Table VI reports the mean achievement scores on the *Standard Reading Inventory* subtests and the t-test comparison between the experimental, control, and sub-control groups. There are nine subtests on the *Standard Reading Inventory*. These subtests are (1) pronouncing vocabulary in context, (2) pronouncing vocabulary in isolation, (3) word recognition errors in oral reading, (4) total errors in oral reading, (5) comprehension-recall after oral reading, (6) comprehension-recall after silent reading, (7) comprehension-total interpretation after oral and silent reading, (8) speed of oral reading, and (9) speed of silent reading.

The *pronouncing vocabulary in isolation test* on the *Standard Reading Inventory* is administered separately from the other tests. Pupils are asked to pronounce from words presented in isolation. There are 265 words in the complete test beginning at pre-primer and running through seventh reader level. The mean score achieved by the experimental pupils was 181.45, by the control pupils 130.89, by the sub-control pupils 98.52. The difference between the experimental and control, and the difference between experimental and sub-control were significant ($p<0.01$), and the difference between the control and sub-control was significant ($p<0.05, >0.01$). The mean achievement for these same experimental group pupils at the end of grade one was 175.14. Fourteen pupils scored better at the end of grade two and fifteen scored better at the end of grade one. The change in scores is not significant. The mean achievement for these same control group pupils at the end of grade one was 60.94. All eighteen pupils scored better at the end of grade two. The change in scores is significant ($p<0.001$).

In all of the other *SRI* subtest measures there was only one significant difference. The experimental group was significantly better ($p<0.01$) than the sub-control group on the pronouncing vocabulary in the context subtest. On the *SRI* subtests there was no consistent superiority of one group over the others. The *Standard Reading Inventory* subtest scores, except for the pronouncing vocabulary in context and the pronouncing vocabulary in isolation, are scores achieved in reading from pre-primer, primer, and first reader materials only. Some of the children in each group were so frustrated by levels at 2-1 reader level and above that it was impossible to test at these levels and, therefore, impossible to make comparisons of subtest scores above 1-2 level since such comparison would be throwing out the poorest readers of each group in unequal proportions.

The types of oral reading errors made when reading from the *Standard Reading*

*Inventory* were tabulated into eight error categories:

1. Pronunciation. This error occurred when the examiner had to pronounce a word for the child.

2. Mispronunciation. This error occurred when a child attempted to pronounce a word and distinctly mispronounced it.

3. Mumbling. This error occurred when a child mumbled a word in such a manner that the examiner could not understand it or record it phonetically.

4. Repetition. This error occurred when a child repeated a syllable, word, or phrase.

5. Substitution. This error occurred when a child substituted one word for another.

6. Omission. This error occurred when a child omitted a part of a word, a word, or a phrase.

7. Addition. This error occurred when a child added an ending, a word, or a phrase.

8. Punctuation. This error occurred whenever a child definitely misread the punctuation.

The number of oral reading errors made by the three groups, the percentages of each type of error made, and the chi-square comparisons of the error tabulations are recorded in Table VII. There were significant differences in the error patterns. The sub-control group had a different error pattern than either the i.t.a. or T.O. group. The i.t.a. and main control groups were not different in their error patterns. The sub-control group needed much more help in having words pronounced for them by the examiner and tended to wait for assistance, thereby making fewer repetitions. The differences found reflect primarily the differences in level of achievement. Children who are achieving at lower levels or beginning reading levels tend to want more assistance from a teacher in pronouncing words and have been found to have a higher percentage of pronunciation errors. As children gain a mastery of word decoding skills, there is a tendency for less pronunciation help and for more repetition as a child repeats in decoding words and phrases.

There is one difference on the testing between the i.t.a. taught children and the control and sub-control groups which was noted consistently throughout the two years which is not discernible from the test scores achieved. The i.t.a. children consistently attempted more paragraphs or stories when reading from the *Gray Oral Reading Tests* and from the *Standard Reading Inventory* even though they did not achieve better. They seemed to have developed a greater independence or a greater tolerance of frustration. Another way to interpret this would be that they had not been taught to depend upon the teacher for assistance in decoding words. This difference is reflected in the superiority on the *Standard Reading Inventory* sub-test pronouncing words in isolation.

The i.t.a. children consistently did well on all of the reading test measures. It should be noted, however, that four childre in the i.t.a. class still were unable to achieve beyond the preprimer level at the end of second grade and needed further instruction at this level. There were two control children and four sub-control children in this same category. As a group the i.t.a. taught children learned to read well, but the use of i.t.a. did not eliminate the problem of a child who seems unable to achieve more than marginally in reading in first and second grades.

It should be noted also that the Hawthorne effect, if any, probably was eliminated from the control children in second grade by the nature of their assignment as a group to one teacher. Random assignment of pupils to the two second grades was not possible. The i.t.a. children in second grade still needed special attention in materials new to the teacher, and, since many of the pupils were still writing in i.t.a., there was probably an effect upon the teacher. However, there was a growth in reading in second grade of 1.5 years in the control group, 1.0 year in the experimental group, and 1.3 years in the sub-control group as measured by the maximum instructional level of the *Standard Reading Inventory* and a growth of 0.6 year in the control group, of 0.9 year in the experimental group, and 0.6 year in the sub-control group as measured by the minimum instructional level of the *SRI*. The differences between the gains of the control and sub-control groups at maximum and minimum levels (1.5 vs 0.6 and 1.3 vs 0.6) seem marked compared to the lack of difference (1.0 vs 0.9) for the experimental group. This seems to reflect the independence of attack or the willingness to tolerate frustration which was noted previously in the experimental group.

TABLE I

Raw Score Mean Achievement of the Stanford Achievement Test, Primary II, at the End of Second Grade for the Experimental, Control, and Sub-Control Groups

| Test | Experimental group N=27 & 28 | Control group N=17 & 16 | Sub-control group N=49-52 |
|---|---|---|---|
| Word Reading | 22.4 | 17.7 | 15.2 |
| Paragraph Meaning | 37.5 | 30.7 | 25.7 |
| Science and Social Studies Concepts | 21.1 | 18.9 | 19.0 |
| Spelling | 11.3 | 10.1 | 8.2 |
| Word Study Skills | 41.6 | 35.2 | 31.1 |
| Language | 40.0 | 35.3 | 33.3 |
| Arithmetic Computation | 23.5 | 20.6 | 17.4 |
| Arithmetic Concepts | 21.9 | 15.2 | 15.6 |
| Median Grade Level Achieved | 3.20 | 2.70 | 2.55 |

## TABLE II

Summary of Analysis of Variance of the Stanford Achievement Tests, Primary II, for the Experimental Control and Sub-Control Groups at the End of Second Grade

| Test | Source | d.f. | s.s. | m.s. | F |
|---|---|---|---|---|---|
| Word Meaning | Groups | 2 | 916.864 | 458.432 | 9.233** |
| | Within groups | 93 | 4617.136 | 49.646 | |
| | Total | 95 | 5534.000 | | |
| Paragraph Meaning | Groups | 2 | 2483.910 | 1241.955 | 9.447** |
| | Within groups | 92 | 12094.580 | 131.462 | |
| | Total | 94 | 14578.490 | | |
| Science and Social Studies Concepts | Groups | 2 | 83.680 | 41.840 | 1.379 |
| | Within groups | 90 | 2728.794 | 30.319 | |
| | Total | 92 | 2812.474 | | |
| Spelling | Groups | 2 | 178.327 | 89.163 | 2.325 |
| | Within groups | 87 | 3259.662 | 38.348 | |
| | Total | 87 | 3437.989 | | |
| Word Study Skills | Groups | 2 | 1963.710 | 981.855 | 7.902** |
| | Within groups | 92 | 11430.880 | 124.248 | |
| | Total | 94 | 13394.590 | | |
| Language | Groups | 2 | 816.640 | 408.320 | 6.589** |
| | Within groups | 93 | 5762.520 | 68.423 | |
| | Total | 95 | 6579.160 | | |
| Arithmetic Computation | Groups | 2 | 679.999 | 339.999 | 4.969** |
| | Within groups | 93 | 6363.408 | 68.423 | |
| | Total | 95 | 7043.407 | | |
| Arithmetic Concepts | Groups | 2 | 824.984 | 412.492 | 7.616** |
| | With groups | 92 | 4982.238 | 54.154 | |
| | Total | 94 | 5807.222 | | |

* $p \leqq 0.05$
** $p \leqq 0.01$

## TABLE III

t-Test Analysis for Significance of Differences between Means of the Achieved by the Experimental, Control, and Sub-Control Groups on the Stanford Achievement Tests, Primary II, at the End of Second Grade

| Test | experimental and control | control and sub-control | experimental and sub-control |
|---|---|---|---|
| Word Meaning | 1.99 | 0.75 | 2.30* |
| Paragraph Meaning | 1.98 | 1.59 | 4.44** |
| Science and Social Studies Concepts | 1.31 | 0.04 | 1.15 |
| Spelling | 0.59 | 1.25 | 1.89 |
| Word Study Skill | 1.72 | 1.35 | 2.68** |
| Language | 1.85 | 0.94 | 2.46* |
| Arithmetic Computation | 0.95 | 1.28 | 1.94 |
| Arithmetic Concepts | 3.11** | 0.18 | 2.74** |

* $p \leqq 0.05$

** $p \leqq 0.01$

TABLE IV

Instructional Reading Levels As Measured in T.O. by the Standard Reading Inventory at the End of Second Grade for the Experimental, Control, and Sub-Control Groups

| Grade Level | Book Level Achieved | Experimental |  |  |  | Control |  |  |  | Sub-Control |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Maximum |  | Minimum |  | Maximum |  | Minimum |  | Maximum |  | Minimum |  |
|  |  | Boys | Girls | Boys | Girls | Boys | Girls | Boys | Girls | Boys | Girls | Boys | Girls |
| 5.5 | 5 |  | 1 |  |  |  |  |  |  |  |  |  |  |
| 4.5 | 4 | 1 | 1 |  |  |  |  |  |  |  |  |  |  |
| 3.7 | $3^2$ | 9 | 6 |  | 3 | 2 | 3 |  |  |  | 1 |  |  |
| 3.2 | $3^1$ | 2 | 1 |  | 2 | 1 | 3 | 1 | 1 | 1 | 1 |  | 1 |
| 2.7 | $2^2$ |  | 2 | 2 | 2 |  |  | 1 | 1 | 4 | 2 |  | 1 |
| 2.2 | $2^1$ | 1 | 1 | 5 | 1 | 3 | 1 | 1 |  | 2 | 1 |  |  |
| 1.7 | $1^2$ | 1 |  | 3 | 2 | 1 |  |  | 2 |  | 2 | 4 | 1 |
| 1.2 | Primer |  |  | 3 | 2 | 2 |  | 3 | 1 | 2 | 1 | 2 | 3 |
| .7 | PrePrimer | 3 | 1 | 4 | 1 | 1 | 1 | 4 | 3 | 3 | 1 | 6 | 3 |
| .2 | Readiness |  |  |  |  |  |  |  |  |  |  |  |  |
|  | N | 17 | 13 | 17 | 13 | 10 | 8 | 10 | 8 | 12 | 9 | 12 | 9 |
|  | Mean Grade Level | 3.1 |  | 2.0 |  | 2.5 |  | 1.5 |  | 2.0 |  | 1.3 |  |

TABLE V

t-Test Analysis for Significance of Differences Between the Means of the Experimental, Control, and Sub-Control Groups on the Standard Reading Inventory at the End of Grade Two

| Level | experimental and control | control and sub-control | experimental and sub-control |
|---|---|---|---|
| Maximum Instructional | .734 | 1.658 | 3.563** |
| Minimum Instructional | 1.805 | 0.779 | 2.893** |

*  $p \leq 0.05$
** $p \leq 0.01$

TABLE VI

Mean Achievement Scores on Standard Reading Inventory Sub-tests[1] and t-Test Comparisons Between the Experimental, Control, and Sub-Control Groups at the End of the Second Grade

| | Means | | | | | |
|---|---|---|---|---|---|---|
| sub-test | experimental N=30 | control N=18 | sub-control N=21 | experimental and control | control and sub-control | experimental sub-control |
| Pronouncing vocabulary in context[2] | 72.13 | 68.77 | 59.15 | 0.688 | 1.805 | 2.827** |
| Pronouncing vocabulary in isolation[2] | 181.45 | 130.89 | 98.52 | 3.14** | 2.191* | 5.413** |
| Word recognition errors in oral reading[3] | 4.31 | 4.33 | 3.90 | 0.014 | 0.255 | 0.250 |
| Total errors in oral reading[3] | 8.76 | 10.11 | 9.10 | 0.578 | 0.464 | 0.330 |
| Comprehension: recall after oral reading[2] | 20.50 | 21.00 | 18.90 | 0.656 | 1.245 | 1.169 |
| Comprehension: recall after silent reading[2] | 13.66 | 15.41 | 13.10 | 1.621 | 1.445 | 0.385 |
| Comprehension: total interpretation after oral and silent reading[2] | 8.83 | 9.00 | 7.65 | 0.119 | 0.719 | 0.954 |
| Speed of oral reading[3] | 107.89 | 134.72 | 121.30 | 1.170 | 0.452 | 0.617 |
| Speed of silent reading[3] | 91.10 | 77.66 | 79.90 | 0.625 | 0.817 | 0.503 |

1. The pronouncing vocabulary in context sub-test covers levels pre-primer through 3-2 reader; the pronouncing vocabulary in isolation sub-test covers levels pre-primer through seventh reader; the other seven sub-tests cover levels pre-primer through 1-2 reader only.
2. A high score is better achievement than a low score.
3. A low score is better achievement than a high score.
* p=0.05
** p=0.01

TABLE VII

Oral Reading Errors Made by the Experimental i.t.a., the Control, (T.O.), and the Sub-Control Groups When Reading Orally from the Standard Inventory in May at the End of the Second Grade and the Chi-Square Comparisons

| Type of error | Number of errors | | | | Percentage of each type | | | | Chi-square | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total N=69 | i.t.a. N=30 | T.O. N=18 | Sub-con. N=21 | Total | i.t.a. | T.O. | Sub-con. | i.t.a. | T.O. | Sub-con. |
| Pronunciation | 300 | 94 | 62 | 144 | 12 | 8 | 10 | 20 | 13.08** | 2.95 | 38.22** |
| Mispronunciation | 102 | 46 | 44 | 12 | 4 | 4 | 7 | 2 | 0.01 | 12.28* | 10.38** |
| Mumbling | 29 | 11 | 2 | 16 | 1 | 1 | 0.3 | 2 | 0.37 | 4.13 | 6.88 |
| Repetition | 667 | 335 | 195 | 137 | 27 | 30 | 31 | 19 | 3.40 | 3.25 | 16.00** |
| Substitution | 498 | 210 | 123 | 165 | 20 | 19 | 19 | 23 | 1.74 | 0.51 | 3.16 |
| Omission | 545 | 272 | 129 | 144 | 22 | 24 | 20 | 20 | 2.38 | 0.88 | 1.1 |
| Addition | 315 | 148 | 77 | 90 | 13 | 13 | 12 | 13 | 0.18 | 0.19 | 0.07 |
| Punctuation | 22 | 10 | 5 | 7 | 1 | 1 | 0.7 | 1 | 0.00 | 0.09 | 0.06 |
| TOTAL | 2478 | 1126 | 637 | 715 | 100 | 100 | 100 | 100 | 21.15 | 24.28* | 75.87** |

* $p \leq 0.05$
** $p \leq 0.01$

DISCUSSION AND TENTATIVE CONCLUSIONS:

1. The results of the *Pre-Reading Test* indicate that there were no significant differences among the experimental group, the control group and the sub-control group in readiness to read. These results indicate that all three groups were drawn from the same population.

2. The mean I.Q. as measured by the *Wechsler Intelligence Scale for Children* for the experimental group was 106, with a mean verbal I.Q. of 102 and a mean performance I.Q. of 108. The mean I.Q. as measured by the *WISC* for the control group was 102, with a mean verbal I.Q. of 102 and a mean performance I.Q. of 102. There were no significant differences between the two groups. The mean I.Q. for those children still available for testing at the end of grade two was 103 for both the control and experimental groups.

The results of the three tests given at the beginning of the school year -- the *Pre-Reading Test*, the *WISC*, and the alphabet knowledge test -- indicate no significant differences between the experimental group and the control group. It seems reasonable to conclude that these two classes were drawn from the same population.

3. Over-all, the amount of time in first grade spent in the teaching of reading and writing did not seem to be different under the *Early-to-Read i/t/a Program* in the experimental group from that under the traditional program in the control group.

*The Wilcoxon Two Sample Test* analysis of the time study indicates that significantly more time was devoted to teacher instruction of the pupils in reading in the control group, and significantly more time was devoted to teacher instruction in arithmetic in the experimental group. Significantly more time was spent in independent pupil writing activities in the experimental group.

When teacher and pupil times were combined, the control group was found to have spent significantly more time on reading, and the experimental group significantly more time in writing and arithmetic. If the reading and writing times are combined there is no significant difference between the two groups. These differences seem to reflect the differences in the two methods, since the *Early-to-Read i/t/a Series* uses writing as a basic part of its method of teaching reading.

There were no significant differences noted in the total amounts of time teachers spent in teaching or in the total amounts of time pupils spent in working independently. There were no significant differences noted in the categories labelled phonics or miscellaneous.

4. There is no significant superiority in over-all reading achievement between the experimental and main control group at the end of first or second grade when the reading is done in T.O. There are consistent, significant differences with better performance by the experimental group in tests requiring only word pronunciation skill.

5. The results of the spelling tests indicate that the *Early-to-Read i/t/a Program* is not detrimental to T.O. spelling achievement at the end of first or second grade. Pupils taught in i.t.a. can be expected to spell in T.O. as well as traditionally taught pupils.

6. The pupils taught under the experimental program had a greater range of achievement and their scores had a more normal distribution than did the others, particularly at the end of grade one when measured by individually administered reading tests in i.t.a. The average and above average pupils

seemed to be extended in their achievement. However, a slow beginning achievement for some children was not eliminated.

7. Word pronouncing achievement as measured by the *SRI Vocabulary in Isolation Sub-Test* was significantly better for the experimental group than for the other groups when reading from i.t.a. at the end of grade one and significantly better when reading from T.O. at the end of grade two.

8. Word pronouncing skill as measured by the *SRI Vocabulary in Isolation Sub-Test* indicates that for all children in all groups word pronouncing achievement is superior to general ability to read. Children were frequently rated at frustration level in reading at a book level at which they could pronounce correctly all of the vocabulary in isolation. This is not meant to say that these children did not understand the words which they pronounced. They recognized (pronounced and understood) the individual words. They lacked fluency in reading sentences consecutively, their reading was slow, and their oral reading characterized by numerous pauses, poor-phrasing, repetition, miscalled words, etc., causing their performances to be rated at frustration level. This superiority of word pronouncing to over-all reading was exhibited by the experimental group at the end of grade one and all groups at the end of grade two.

9. The amount of loss which might be expected in transfer from i.t.a. to T.O. is crucial in evaluating this study. One indication of the loss is given on the *Vocabulary in Isolation Sub-Test* of the *SRI* administered in March of first grade. The experimental and control groups were not significantly different in their abilities to pronounce words in T.O. The experimental group was significantly better when tested in i.t.a. The difference or loss as the experimental children transferred from i.t.a. to T.O. was approximately two years. Their performance in i.t.a. was at ending 3-2 level in word pronouncing; their performance in T.O. was at ending primer level.

The mean scores of the *SRI Pronouncing Vocabulary in Isolation Test* were 181.44 for the experimental group, 130.44 for the control group, and 98.52 for the sub-control group at the end of grade two. The mean scores were 175.14 for the same experimental children and 60.94 for the same control children at the end of grade one.

The experimental group did not change significantly in its performance at the end of grade one to the end of grade two. In grade one the test was administered in i.t.a. and in T.O. in grade two. This would indicate that children taught with i.t.a. do learn to decode very rapidly but that once this skill is mastered we should not expect continued rapid growth. This could indicate that it took a year of work in reading to transfer in this one area. It might mean that something of a maximum had been reached and that transfer was reached in a relatively short time with a plateau of achievement being maintained for several months.

The results of the *Gray Oral Reading Test* administered at the beginning of grade two showed no significant differences in achievement between the experimental group's scores when tested in i.t.a. and T.O. This would indicate a substantial loss in i.t.a. achievement over the summer months, since achievement in i.t.a. had been superior to achievement in T.O. in the June testing.

The results of the *Gray Oral Reading Test* administered in the middle of second grade indicate no significant difference in achievement between the experimental and control groups. This would indicate that transfer was not taking place immediately but rather slowly.

It would seem that the early high achievement in i.t.a. is lost in transfer except for skill in pronouncing words in isolation. It would appear that the control pupils are catching up in this area. This result should be neither surprising nor unexpected. Early achievement in reading has not been demonstrated to mean greater achievement later. The problem of learning to read is largely one of word pronouncing at the very beginning stages; thus, i.t.a. succeeds well at the beginning stages. However, very few people, if any, equate word pronouncing with reading. Reading is more than word pronouncing. The results of this study support this contention. It seems that transfer does take place, that it takes place without stress, and that it takes a long period of practice for recovery of fluency before growth continues. It would seem unwise to expect that a child will transfer and continue to grow in reading achievement without a period of practice. This period of practice would seem to average a minimum of six months. The difference between the reading growth of the experimental and control groups as measured by the maximum instructional levels of the *SRI* at the end of the first and second grades, 0.5 year, would support this estimate of six months loss or a six month plateau at the time of transfer.

10. The superior achievement of the experimental and control groups as compared to the sub-control group indicates good achievement under both the *Early-to-Read Program* and the traditional program. There are no marked detrimental effects noted for the children in the experimental group. There is one marked superiority, word pronouncing skill when words are presented in isolation.

The analysis of reading patterns on the *SRI* sub-tests and the analysis of the oral reading error patterns indicated that the experimental and control groups were achieving in the same manner, except in the area noted, word pronouncing skill of words presented in isolation. This supports the contention that the *Early-to-Read Program* had no detrimental effect.

11. The superior achievement of the experimental and control groups over the sub-control group and the differences in reading patterns on the *SRI* may be interpreted as a Hawthorne effect. A study of Hawthorne effect has been made as an extension of this study. This data is being analyzed. The initial analysis suggests both a positive Hawthorne effect and a negative Hawthorne effect. A positive Hawthorne effect will cause scores to rise and a negative Hawthorne effect may cause scores to go down. These two effects probably occur together, the positive affecting the experimental group and the negative affecting the control group.

SUMMARY:

Thirty-four pupils randomly assigned to one first grade were taught using the *Early-to-Read i/t/a Series*, and twenty-six pupils randomly assigned to another first grade were taught using the *Ginn Basic Readers* in a traditional manner. A sub-control group composed of three first grades, eighty-six pupils, was selected randomly from the remaining first grades in the school system.

The randomization seemed effective in that no significant differences were found between the experimental and control groups as measured by the *WISC* and knowledge of the alphabet at the beginning of the school year, and no significant differences were found among the experimental, control and sub-control groups on the *Pre-Reading Test*.

Pupils in the experimental and control groups were tested in December 1964, March 1965, September 1965, and January 1966 for reading achievement using the *Gray Oral Reading Tests* and the *Vocabulary in Isolation Sub-Test* of the *SRI* in December 1964 and March 1965. All three groups were tested with the *SAT* and the *SRI* at the end of May 1965 and again in May 1966. The *Gray Oral*

*Reading Tests* and the *SRI* were transliterated for administration to the experimental group in first grade and the September 1965 testing in second grade. The *SAT* was administered in T.O. to all groups.

There were no significant differences in first grade achievement as measured by the six tests of the *SAT, Primary I,* except in *Word Recognition* between the experimental and control groups. Both the experimental and control groups were superior to the sub-control group on all six tests of the *SAT*. The experimental group read significantly better than the control and sub-control groups when reading from i.t.a. according to the *SRI* administered at the end of grade one.

There were no significant differences in second grade achievement between the experimental and control groups as measured by the seven tests of the *SAT, PRIMARY II,* except in *Arithmetic Concepts;* there were no signficant differences in maximum or minimum instructional reading levels as measured by the *SRI* in May of second grade; there were no significant differences on the nine sub-tests of the *Standard Reading Inventory* except in *Pronouncing Vocabulary in Isolation.* There were no significant differences in error pattern when reading orally on the *SRI* between the experimental and control groups. There were no significant differences in over-all reading achievement as measured by the *Gray Oral Reading Test* in second grade in September or January.

There were fairly consistent and significant differences between both the experimental and sub-control groups, and between the control and sub-control group on most measures of reading achievement at the end of first grade and at the end of second. The experimental group consistently achieved the highest scores and the sub-control group consistently achieved the lowest scores. There were more significant differences between the experimental and sub-control groups than there were between the control and sub-control groups.

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## 2. A THREE-YEAR LOOK AT I.T.A.

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### PROBLEM

A three-year longitudinal study*, followed by a modified replication, of four different approaches to beginning reading instruction has just been completed in the public schools of New Castle, Pennsylvania. Among the four approaches under investigation was the *Early-to-Read i/t/a Program* by Tanyzer and Mazurkiewicz. This effort was part of a larger, coordinated series of studies of beginning reading instruction, often referred to as the "First Grade Reading Studies", sponsored by the United States Office of Education through its Cooperative Research Program. Twenty-seven individual studies and approximately 30,000 children were included in various localities across the nation during the 1964-65 school year, but only fifteen of the experiments were continued into second grade and nine of them were conducted for three years. It now seems likely that a few will go further.

Each one of the studies had its own specific objectives, and none of them was a duplication of another. Nevertheless, serious efforts were exerted to coordinate the studies by agreeing to certain common controls and dependent variables.

A primary objective of the New Castle study was to compare the reading achievement and attitudes of students who received beginning reading instruction through four different approaches. Related questions dealing with home influences, preschool educational experiences, content area achievement, and the teaching characteristics of teachers whose classes achieved at levels higher than expected and those whose classes maintained a high interest in reading were also investigated but will not be reported in this paper.

### METHOD

The four independent treatment variables in first grade were: (1) a basal reader program utilizing a "whole-word" approach to beginning reading instruction and ability grouping procedures, represented by the methods and materials of Scott, Foresman and Company, 1960-62 edition; (2) a phonics approach using essentially whole-class teaching procedures and filmstrips correlated with the reading texts, represented by the materials published by the J. B. Lippincott Company, 1963 edition; (3) a combination whole-word plus phonics approach using the materials and methods (including grouping techniques) of Scott, Foresman and Company, 1960-62 edition, but supplemented with *Phonics and Word Power*, a series of booklets published by American Education Publications, Inc., 1964 edition; and (4) the *Early-to-Read i/t/a Program* published by i/t/a Publications, Inc., 1964 edition, which emphasizes a total language approach and grouping procedures. Each treatment variable remained unchanged throughout the study except for i.t.a. Since it was designed as a program of beginning reading instruction, Dr. Mazurkiewicz recommended using the *Treasury of Literature Series* of Charles E. Merrill Books, Inc., 1960 edition following transition to traditional orthography. Teachers used only those methods and materials recommended by the book company consultants for instructional purposes, but all children were encouraged to do wide independent reading.

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The dependent variables during each year of the study included: (1) group, standardized tests of silent reading achievement *(Stanford Achievement Test)*; (2) an inventory of attitudes toward reading *(San Diego County Inventory of Reading Attitude)*; and (3) a record of the number of books read independently. In addition, randomly selected samples of the population were given certain individual tests of oral reading achievement *(Gates Word Pronunciation Test, Fry Phonetically Regular Words Oral Reading Test,* and *Gilmore Oral Reading Test)*. The Primary I Battery of the Stanford Achievement Test was used in January and May of Grade I, while the Primary II Battery was used in January and May of Grade II and III, and the Intermediate I Battery was administered in June of Grade III.

The population of the study was randomly selected by attendance areas and assigned to the required number of classrooms and treatment groups prior to their entrance into Grade I. Only those students for whom complete data was available were included in the statistical analysis. There were many reasons for student attrition including moving, retention, and absence from school during testing periods. The original study, which was begun in September 1964, was composed of five classrooms per treatment method and 415 students. One Scott, Foresman teacher became ill during first grade resulting in the loss of her entire class from the study. Nineteen classes and 365 pupils were included in the comparisons drawn at the end of Grade I; 302 children remained at the end of Grade II; and the population decreased to 262 when the study was completed at the end of Grade III.

In the replicative study, beginning in September 1965, only three classes per treatment method were selected. End of the year comparisons were made on 248 first-grade students and 213 pupils remained by the end of second grade. The replicative results are not reported here but they generally support the major study.

Those publishing companies whose materials were used in this study provided consultant services to the teachers of the original study to aid them in following appropriate procedures through classroom observations followed by in-service workshop meetings. Teachers who participated in the replication were almost always those who were in the original study, and in-service work was largely eliminated in an attempt to control Hawthorne effects.

Dr. Albert Mazurkiewicz was the consultant to the i.t.a. teachers, but was followed in the middle of second grade (well after transition had been completed) by Miss G. Margaret Wilson of Charles E. Merrill Books, Inc. The other consultants were Miss Ednamae Bruggeman, Scott, Foresman and Company; Dr. Glenn McCracken, J. B. Lippincott Company; and Mrs. Elaine Wonsavage, American Education Publications, Inc. Each of the consultants conducted a three-day workshop in August 1964 before the original study was begun. They also visited and observed each classroom seven times during that year and conducted after-school workshops following each day of observation. As another attempt to eliminate Hawthorne effects, the preschool workshop meetings were reduced to one day, and only four classroom visitations and subsequent workshops were held during the second and third years of study.

Administrative personnel made a series of random, unannounced classroom visitations each year as another check on adherence to procedural and material limitations. During these observation periods, each supervisor independently rated the teachers for effectiveness on the *Hayes Teacher Rating Scale*. Twenty classroom visits were made during the first year of the study and twelve visitations were made to each classroom of both grades during the second and third years of study.

Teacher logs were also used as a method safeguard. Teachers in the original study submitted logs to the field director during alternate weeks on which they recorded the materials used, the skills taught, the grouping procedures followed and the time spent in teaching reading. Teachers of the replicative study submitted monthly summaries of the materials used and grouping procedures. The local school district requires that reading be taught for 560 minutes per week during first grade, 530 minutes per week during second grade, and 415 minutes per week in third grade.

## STATISTICAL ANALYSIS

Statistical analysis consisted of correlation coefficients, a 4 x 3 factorial analysis of variance and covariance (where appropriate). In this analysis factor A consisted of four methods of teaching reading while factor B represented three levels of intelligence (high, average and low). In the third year of the study the preceding analysis involved random casting out of cases to produce an equal number of cases per cell. This resulted in 15 cases per IQ level, 45 per treatment and a total N of 180 in Grade II and also in Grade III. In the last year of the study the Stanford paragraph meaning scores were also analyzed for all students by an unweighted means analysis with very similar results to the analysis for just 180 pupils.

For the analysis of variance involving 180 cases per grade, a Tukey (a) multiple range test was employed to determine which differences between means were contributing to significant F ratios. When analysis of covariance produced significant F ratios, Winer's multiple F test was used to compare differences between each appropriate pair of means. The analysis of variance, covariance and correlation matrices were performed at the Computation Center of the Pennsylvania State University, University Park, Pennsylvania in the final year of the study while in the first two years the data was analyzed by the University of Minnesota Computer.

## RESULTS

The following treatment IQ Means in Grade III were very comparable: 98.58 for Lippincott, 98.49 for Scott, Foresman, 97.96 for i/t/a-Merrill and 96.98 for Phonics and Word Power. Teacher average effective ratings per treatment were also very similar: 15.67 for Scott, Foresman, 15.40 for Lippincott, 15.18 for Phonics and Word Power and 14.40 for i/t/a-Merrill.

The grade equivalent means on the Stanford Achievement Test, after adjusting statistically for factors such as intelligence and teacher effectiveness ratings, were as follows:

## TABLE I

## PARAGRAPH MEANING BY TREATMENTS

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - January 27/65 | 1.4 | 1.6 | 1.6 | 1.6 |
| Grade I - April 29/65 | 1.7 | 1.8 | 1.8 | 1.8 |
| Grade II - January 12/66 | 2.6 | 2.5 | 2.9 | 2.8 |
| Grade II - May 20/66 | 2.9 | 3.2 | 3.1 | 3.1 |
| Grade III - January 12/67 | 3.4 | 3.7 | 3.8 | 3.8 |
| Grade III - June 1/67 | 4.3 | 4.4 | 4.9 | 4.6 |

For the above, a significant difference occurred as follows: (1) in January of Grade II when Lippincott was compared to Phonics Word Power, (2) in June of Grade III when Lippincott was compared with Phonics and Word Power and also with Scott, Foresman.

## TABLE 2

## SPELLING BY TREATMENTS

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - January 27/65 | 1.3 | 1.6 | 1.7 | 2.0 |
| Grade I - April 29/65 | 1.7 | 2.0 | 1.9 | 2.1 |
| Grade II - January 12/66 | 2.5 | 2.9 | 3.1 | 3.0 |
| Grade II - May 20/66 | 3.1 | 3.4 | 3.6 | 3.6 |
| Grade III - January 12/67 | 3.6 | 3.8 | 4.0 | 4.4 |
| Grade III - June 1/67 | 4.4 | 4.4 | 4.8 | 4.5 |

For the above, the significant differences were: (1) in January of Grade I when i.t.a. was compared to each of the other three groups and also when Lippincott and Phonics and Word Power were compared to Scott, Foresman, (2) in April of Grade I the results favored i.t.a., Lippincott, and Phonics and Word Power compared to Scott, Foresman, (3) in January and May of Grade II the results favored i/t/a-Merrill and Lippincott over Scott, Foresman, (4) in January of Grade III i/t/a-Merrill and Lippincott compared favorably to Scott, Foresman and i/t/a-Merrill also was greater than Phonics and Word Power, and (5) in June of Grade III the results favored Lippincott versus Scott, Foresman and Phonics and Word Power.

## TABLE 3

## WORD MEANING (READING) BY TREATMENTS

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - January 27/65 | 1.3 | 1.5 | 1.7 | 1.9 |
| Grade I - April 29/65 | 1.7 | 1.8 | 2.0 | 1.9 |
| Grade II - January 12/66 | 2.5 | 2.7 | 3.0 | 3.0 |
| Grade II - May 20/66 | 2.9 | 3.1 | 3.3 | 3.3 |
| Grade III - January 12/67 | 3.8 | 3.7 | 4.2 | 4.0 |
| Grade III - June 1/67 | 4.7 | 4.6 | 5.1 | 4.9 |

For the above the significant differences were: (1) in January of Grade I, i.t.a. compared to each of the other three groups while Lipp was also ahead of SF and PWP while PWP was ahead of SF, (2) in April of Grade I Lipp compared to SF and PWP and i.t.a. compared to SF, (3) in January of Grade II i/t/a-M and Lipp were ahead of SF, (4) in January of Grade III Lipp was ahead of PWP, and (5) in June of Grade III the results favored Lipp compared to both SF and PWP.

## TABLE 4

## WORD STUDY SKILLS BY TREATMENTS

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - January 27/65 | 1.4 | 1.6 | 1.8 | 2.1 |
| Grade I - April 29.65 | 1.8 | 2.0 | 2.0 | 2.0 |
| Grade II - January 12/66 | 2.5 | 2.4 | 3.6 | 3.0 |
| Grade II - May 20/66 | 2.8 | 3.2 | 4.0 | 3.4 |
| Grade III - January 12/67 | 3.6 | 4.0 | 5.2 | 4.8 |
| Grade III - June 1/67 | 4.4 | 5.3 | 5.8 | 5.8 |

For the above the significant differences were: (1) in January of Grade I i.t.a. compared to each of the other three and Lipp and PWP compared to SF, (2) in April of Grade I i.t.a., Lipp and PWP compared to SF, (3) in January of Grade II Lipp compared to each of the other three groups and i/t/a-M versus both SF and PWP, and (4) in May of Grade II Lipp was ahead of the other three and i/t/a-M over SF, (5) the January Grade II results favored Lipp over SF and PWP while i/t/a-M was ahead of SF, and (6) in June of Grade III SF was behind each of the other three.

The grade equivalent means on the Stanford Achievement Test for the high IQ level were as follows:

TABLE 5

PARAGRAPH MEANING BY TREATMENTS

(HIGH IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 2.0 | 1.9 | 2.4 | 2.4 |
| Grade II - Jan 12/66 | 2.9 | 2.9 | 3.4 | 3.3 |
| Grade II - May 20/66 | 3.4 | 3.6 | 3.8 | 3.9 |
| Grade III - January 12/66 | 3.8 | 3.9 | 4.3 | 4.0 |
| Grade III - June 1/67 | 4.8 | 4.7 | 6.0 | 4.9 |

For the above the singificant differences were: (1) in April of Grade I and in January of Grade II i/t/a-M and Lipp compared to SF and PWP, (2) in May of Grade II i/t/a-M and Lipp compared to SF, and (3) in June of Grade III Lipp versus PWP.

TABLE 6

SPELLING BY TREATMENTS

(HIGH IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 1.4 | 1.6 | 1.7 | 1.7 |
| Grade II - January 12/65 | 2.9 | 3.3 | 3.5 | 3.3 |
| Grade II - May 20/66 | 3.4 | 3.7 | 4.0 | 4.0 |
| Grade III - January 12/67 | 3.7 | 4.0 | 4.4 | 4.6 |
| Grade III - June 1/67 | 4.9 | 4.6 | 5.4 | 4.6 |

For the above the significant differences were: (1) in April of Grade I, counting spelling in i.t.a. as correct, i.t.a., Lipp, and PWP compared to SF, (2) in January of Grade II Lipp over SF, and (3) in May of Grade II i/t/a-M and Lipp over SF.

## TABLE 7

### WORD MEANING (READING) BY TREATMENTS

### (HIGH IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 1.9 | 2.0 | 2.7 | 2.5 |
| Grade II - Janauary 12/66 | 2.9 | 2.9 | 3.5 | 3.6 |
| Grade II - May 20/66 | 3.6 | 3.6 | 3.8 | 4.0 |
| Grade III - January 12/67 | 4.4 | 3.8 | 4.7 | 4.4 |
| Grade III - June 1/67 | 5.2 | 4.9 | 5.8 | 5.1 |

For the above the significant differences were: in April of Grade I and January of Grade II Lipp and i.t.a. over SF and PWP.

## TABLE 8

### WORD STUDY SKILLS BY TREATMENTS

### (HIGH IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 2.4 | 2.3 | 3.0 | 3.0 |
| Grade II - January 12/66 | 3.1 | 2.8 | 5.2 | 3.9 |
| Grade II - May 20/66 | 3.7 | 3.9 | 5.2 | 5.4 |
| Grade III - January 12/67 | 4.5 | 4.7 | 6.0 | 5.4 |
| Grade III - June 1/67 | 5.5 | 6.0 | 6.2 | 6.0 |

For the above the significant differences were: (1) in April of Grade I and January and May of Grade II Lipp and i/t/a-M over SF, (2) in January of Grade II Lipp over i/t/a-M and PWP while i/t/a-M was favored over PWP, and (3) in May of Grade II Lipp and i/t/a-M over PWP.

The grade equivalent means on the Stanford Achievement Test for the average IQ level were as follows:

### TABLE 9

### PARAGRAPH MEANING BY TREATMENTS

### (AVERAGE IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 1.8 | 1.7 | 1.9 | 1.9 |
| Grade II - January 12/66 | 2.7 | 2.5 | 2.9 | 2.8 |
| Grade II - May 20/66 | 3.0 | 3.1 | 3.1 | 3.1 |
| Grade III - January 12/67 | 3.5 | 3.7 | 4.0 | 4.0 |
| Grade III - June 1/67 | 4.7 | 4.6 | 4.9 | 4.8 |

For the above the significant differences were: (1) in April of Grade I Lipp and i/t/a-M compared to PWP, (2) in January of Grade II Lipp versus PWP.

### TABLE 10

### SPELLING BY TREATMENTS

### (AVERAGE IQ LEVEL)

| | SF | PWP | Lipp | I/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 1.2 | 1.2 | 1.4 | 1.5 |
| Grade II - January 12/66 | 2.4 | 2.8 | 3.1 | 3.1 |
| Grade II - May 20/66 | 3.2 | 3.3 | 3.8 | 3.6 |
| Grade III - January 12/66 | 3.6 | 3.9 | 4.6 | 4.6 |
| Grade III - June 1/67 | 4.5 | 4.6 | 5.1 | 4.7 |

For the above the significant differences were: (1) counting words correct in i.t.a. both i.t.a. and Lipp compared to SF and PWP in April of Grade I, (2) in January of Grade II i/t/a-M and Lipp versus SF and PWP, (3) in May of Grade II Lipp compared to SF and PWP, and (4) in January of Grade III i.t.a. and Lipp over SF.

## TABLE 11

### WORD MEANING (READING) BY TREATMENTS

### (AVERAGE IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 1.7 | 1.7 | 2.2 | 2.1 |
| Grade II - January 12/66 | 2.6 | 2.6 | 3.1 | 2.9 |
| Grade II - May 20/66 | 3.1 | 2.9 | 3.3 | 3.3 |
| Grade III - January 12/67 | 3.8 | 3.8 | 4.2 | 4.2 |
| Grade III - June 1/67 | 5.1 | 4.6 | 5.2 | 5.1 |

For the above the significant differences were: (1) in April of Grade I Lipp and i/t/a-M versus SF and PWP, and (2) in January of Grade II Lipp compared to SF and PWP.

## TABLE 12

### WORD STUDY SKILLS BY TREATMENTS

### (AVERAGE IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 1.8 | 1.8 | 2.1 | 2.2 |
| Grade II - January 12/66 | 2.3 | 2.4 | 3.9 | 3.1 |
| Grade II - May 20/66 | 2.8 | 2.8 | 4.7 | 3.5 |
| Grade III - January 12/67 | 4.0 | 4.2 | 6.0 | 5.2 |
| Grade III - June 1/67 | 4.5 | 5.3 | 6.5 | 6.2 |

For the above the significant differences were: (1) in April of Grade I i.t.a. and Lipp versus SF and PWP, (2) in January and May of Grade II Lipp compared to the other three groups and i/t/a-M versus SF and PWP, and (3) in January and May of Grade III Lipp compared to SF.

## TABLE 13

## PARAGRAPH MEANING BY TREATMENTS

## (LOW IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 1.6 | 1.6 | 1.6 | 1.6 |
| Grade II - January 12/66 | 2.4 | 2.1 | 2.4 | 2.1 |
| Grade II - May 20/66 | 2.9 | 2.6 | 2.6 | 2.6 |
| Grade III - January 12/67 | 3.0 | 3.3 | 3.3 | 3.3 |
| Grade III - June 1/67 | 3.7 | 3.9 | 4.2 | 3.9 |

The above differences were not significant.

## TABLE 14

## SPELLING BY TREATMENTS

## (LOW IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 1.1 | 1.1 | 1.1 | 1.3 |
| Grade II - January 12/66 | 2.4 | 2.4 | 2.5 | 2.4 |
| Grade II - May 20/66 | 3.0 | 2.9 | 3.0 | 3.1 |
| Grade III - January 12/67 | 3.4 | 3.5 | 3.8 | 3.9 |
| Grade III - June 1/67 | 4.0 | 4.0 | 4.3 | 4.0 |

The above differences were not significant.

## TABLE 15

## WORD MEANING (READING) BY TREATMENTS

## (LOW IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 1.5 | 1.5 | 1.6 | 1.7 |
| Grade II - January 12/66 | 2.1 | 2.1 | 2.7 | 2.6 |
| Grade II - May 20/66 | 2.7 | 2.6 | 2.9 | 2.7 |
| Grade III - January 12/67 | 3.3 | 3.3 | 3.8 | 3.6 |
| Grade III - June 1/67 | 3.8 | 3.9 | 4.6 | 4.1 |

For the above significant differences resulted in January of Grade II favoring Lipp and i/t/a-M versus SF and PWP.

## TABLE 16

## WORD STUDY SKILLS BY TREATMENTS

## (LOW IQ LEVEL)

| | SF | PWP | Lipp | i/t/a-M |
|---|---|---|---|---|
| Grade I - April 29/65 | 1.5 | 1.6 | 1.5 | 1.7 |
| Grade II - January 12/66 | 2.4 | 2.0 | 2.6 | 2.3 |
| Grade II - May 20/66 | 2.5 | 2.5 | 2.8 | 2.4 |
| Grade III - January 12/67 | 2.8 | 3.5 | 4.2 | 3.7 |
| Grade III - June 1/67 | 3.4 | 4.4 | 4.8 | 5.0 |

For the above the significant differences were: (1) in January of Grade II Lipp compared to PWP, and (2) in January of Grade III Lipp versus SF.

Each year of the study a representation sub-sample of pupils were chosen for individual testing. In Grades I and II the results on the Gates Word List significantly favored Lipp and i/t/a-M over SF and PWP. In Grade III the following treatment means for the Gates Word List were not significantly different: i/t/a-M 34.89, Lipp 33.94, PWP 32.78 and SF 31.72.

The Gilmore Accuracy results provided significant differences as follows: (1) in April of Grade I for the high IQ level Lipp and i/t/a-M compared to SF and PWP, (2) in May of Grade II for the average IQ level i/t/a-M over

SF, (3) in April of Grade III i/t/a-M over SF for entire sub-sample, and (4) in April of Grade III for the high IQ level Lipp and i/t/a-M over SF. In April of Grade III the Gilmore Accuracy means for the entire sub-sample were: i/t/a-M 37.83, Lipp 35.78, PWP 33.78 and SF 30.94.

The Gilmore Comprehension results were significantly different as follows: (1) in April of Grade I for the average IQ level SF over Lipp, (2) in April of Grade III for the low IQ level i/t/a-M over Lipp, (3) for the high IQ level in Grade III Lipp and i/t/a-M were ahead of SF and PWP, and (4) for the total sub-sample in Grade III Table 17 reports differences favoring i/t/a-M over both Lipp and SF.

TABLE 17

GILMORE COMPREHENSION

(NUMBER OF PUPILS TESTED TOTALS 72)

| | | Differences | | |
|---|---|---|---|---|
| | MEANS | PWP | Lipp | SF |
| i/t/a-M | 26.67 | 3.06 | 3.56* | 3.73* |
| PWP | 23.61 | | .50 | 1.67 |
| Lipp | 23.11 | | | .17 |
| SF | 22.94 | | | |

* Significant at the .05 level

Significant differences for Gilmore Rate were: (1) for the entire sub-sample in Grade I i.t.a. was higher than Lipp and PWP, (2) for the high IQ level in Grade I i.t.a. over PWP, and (3) for the average IQ level in Grade I i. t.a. and SF over Lipp. Subsequent to Grade I there were no significant differences in Gilmore Rate. In April of Grade III the treatment means for Gilmore Rate were: SF 124.44, Lipp 121.78, i/t/a-M 119.83, and PWP 118.28.

As measured by the San Diego County Inventory of Reading Attitude in April of Grade I, PWP was rated significantly higher than each of the other three treatment groups. The results for the same attitudinal inventory in April of Grade II indicated that SF was rated significantly lower than each of the other three groups. In April of Grade III there were no significant differences for the San Diego inventory and the treatments means were as follows: i/t/a-M 19.18 , Lipp I-.09, PWP 18.89 and SF 17.09.

Based on the number of books read other than the regular textbooks, SF was significantly ahead of the other three groups in Grade I while in the same grade Lipp was significantly ahead of PWP and i.t.a. For the same variable in Grade II i/t/a-M was significantly behind the other three groups. In Grade III Lipp and SF were significantly ahead of i/t/a-M and PWP with the following number of books read in a typical month: Lipp 10.77, SF 10.31, PWP 6.21 and i/t/a-M 5.59.

## DISCUSSION

In Grade I while Scott, Foresman read the most books, the other three programs generally appeared to help children to higher silent achievement as measured by a standardized test. The Phonics and Word Power Group scored highest on the reading attitude inventory in Grade I but read comparatively few books. In Grade I for the high IQ third the i.t.a. and Lippincott programs produced higher silent and oral achievement than did the other two approaches. For the average IQ level in Grade I i.t.a. and Lippincott produced higher silent achievement than did the other two programs. Usually i.t.a. was highest in both oral and silent achievement for the low IQ third in Grade I.

Most i.t.a. pupils made the transfer to traditional orthography by the end of first grade (66 percent of the low IQ third, 89 percent of the average IQ third, and 83 percent of the high IQ third). Of the remainder, 17 percent of the low IQ third made the transfer in September, 3 percent in October, and 14 percent in November of Grade II. For the average IQ third, the transfer was made by 3.7 percent in September, 3.7 percent in October, and 3.7 percent in November. For the high IQ third, 14 percent transferred in October and 3 percent completed transition in November of Grade II.

In Grade II Scott, Foresman averaged significantly lower than each of the other three groups on the San Diego County Inventory of Reading Attitude but by April of Grade III there were no significant differences for this variable. In all three grades i/t/a-Merrill lagged significantly behind each of the other three groups on number of books read other than regular textbooks.

For the first two years i/t/a-Merrill and Lippincott were significantly ahead on the Gates Word List but by April of Grade III the differences on this variable were no longer significant. By April of Grade III i/t/a-Merrill was significantly ahead of Scott, Foresman on the Gilmore Accuracy Test and, for the Gilmore Comprehension, i/t/a-Merrill scored significantly higher than both Scott, Foresman and Lippincott.

By the end of Grade III Lippincott scored significantly higher on Paragraph Meaning and Spelling than did Scott, Foresman and Phonics and Word Power. Lippincott was also favored significantly over Phonics and Word Power on word meaning at the end of third grade. At the same time (June Grade III) Scott, Foresman scored significantly lower than the other three groups on word study skills.

During 1964-65, twelve percent of the Lippincott pupils were retained in Grade I compared to three percent of the i.t.a. pupils, six percent of the Scott, Foresman pupils, and six percent of the Phonics and Word Power pupils. In the second year of the study, 1965-66, there were almost eight percent of the Lippincott children who were retained in second grade compared to almost five percent i/t/a-Merrill pupils, almost two percent Scott, Foresman pupils, and almost five percent Phonics and Word Power pupils. In Grade I of 1965-1966, the retainee percentages were: 11.3 Lippincott; 18.3 i.t.a; 1.5 Scott, Foresman; and 5.2 Phonics and Word Power pupils. A majority of the students who have been retained have attended schools which were located in lower socio-economic areas of New Castle. Their IQ and reading readiness scores, while somewhat lower than the means attained by the entire population, were frequently high enough to suggest that many of the retainees should have succeeded. It is noted that the Lippincott teachers primarily used a whole-class approach as recommended by the Lippincott consultant for this study. It may be that with ability grouping and other methods of meeting individual differences, these retention figures could have been reduced.

Each of the four approaches to teaching beginning reading which were used in this study had the advantage of being taught under rather ideal conditions. The inservice education which was provided the teachers was generally very good; the teachers received much more supervision than is normally available; there was generally a very high interest generated in teaching reading effectively; the cooperation among all who were involved was unusually good; and all of the most recent materials offered by the involved companies were provided. Therefore, it cannot be assumed that the use of any one of the approaches, without the conditions of this study, would produce similar results.

## CONCLUSIONS

Conclusions which appear warranted by this study are these: (1) reading programs which teach heavily concentrated sound-symbol relationships in first grade appear to give children greater power in reading lists of words in both grades one and two, (2) the preceding advantage appears transferable by the end of Grade III to words in context in oral reading for pupils taught reading by the i/t/a-Merrill program, (3) phonic approaches seem to produce significantly better results in Word Study Skills than does a typical eclectic basal reader, (4) i.t.a. does not confuse pupils in the area of spelling, (5) by the end of third grade the Lippincott program appears to produce the best overall results on a standardized silent reading achievement test, (6) the consistently high retention ratios for pupils in the Lippincott program may indicate that the whole-class approach to the teaching of reading is not a procedure to be recommended, and (7) method and materials as well as teachers can make a difference in the teaching of reading.

## 3. THE EFFECT OF TWO DIFFERENT ORTHOGRAPHIES ON BEGINNING READING

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For some time we have been told that "Johnny Can't Read" or that "Ivan Knows Something That Johnny Doesn't." If there is anything guaranteed to rouse the fears of parents and educators alike it's an article or book which insists that American children are growing up unable to read. One recent example of this sort of alarmist literature was *Tomorrow's Illiterates* in which Professor Charles G. Walcutt and some of his associates estimated that three of four Americans were not reading as well as they should or could. Without citing any statistical source, Walcutt blamed the situation on the "Word Recognition" method which, as he said, "necessarily limits the reading vocabulary of young children." (November 13, 1961 issue of Newsweek, p. 90)

We have also been told that instruction in reading is generally ineffective and that various essentials are being neglected. Many writers have indicated specific causes of reading problems as they see them while others frequently recommend simple panaceas. One of the most frequently recommended correctives is the initiation of a specific form of phonetic instruction. Others have suggested the abandonment of the usual textbook instruction and the adoption of an individual reading approach, or the use of unique procedures for grouping children for the instruction of reading. Primary independence on films and filmstrips as basal instructional materials has been suggested as well as using color to teach sound-symbol correspondences. The National Council of Teachers of English estimates that four million elementary school pupils have reading disabilities. James B. Conant wrote in his report on education in the Junior High School that he had been in schools where thirty-five to fifty percent of the ninth-graders were reading at the sixth-grade level or below. He found the same trouble higher up.

What then appears to be wrong? Our methods have been of proven excellence for we do develop a high degree of reading skill in the population. (Gates, 1961) in a recent study based on a comparison of test scores obtained from approximately 107,000 children in 1937 and 31,000 in 1957 substantial improvement was shown.

For the past fifteen years I have been teaching reading at some level to a wide range of students: mentally retarded; beginning reading to first-graders; developmental reading through the grades; remedial reading; enrichment programs for the gifted; adults through the adult education courses; and at present students preparing to go out into the teaching world themselves as elementary school teachers.

I was disturbed that there was such a large number of reading failures in the middle-class suburban district in California in which I was employed, especially since there were very few children from minority groups enrolled. Why were they doing so poorly in reading that eighteen remedial reading centers with special teachers were required to handle the most difficult cases?

I have been concerned most with the youngsters who come into the first-grade eager and wanting to learn to read, but somehow when the year is over they haven't made much progress and aren't much further ahead than they were in September. The variety of material available for reading instruction indicates the numerous attempts to solve the difficulties children ordinarily have in achieving reading success in the first-grade.

In 1963 I happened to read an article by John Downing in the Reading Teacher concerning the use of a new revised alphabet as an aid in teaching beginners to read. Within a short time articles appeared in many other periodicals and trade magazines. Downing was involved in quite a large study in Great Britain and Mazurkiewicz was also in the first-year of a study in Bethlehem, Pennsylvania schools. It was an acknowledged fact that the spelling difficulties of children were caused to a great extent by the inconsistencies of the English language. Why wouldn't this hold true for reading since there is a definite correlation between reading and writing (or spelling). At the same time I had enrolled in the Doctoral Program at the University of California at Berkeley and was trying to come up with a Proposal for a study that would fulfill that requirement: i.t.a. seemed to be the answer. The administration of the district in which I was working was very cooperative. A three year pilot study was agreed upon, with the district supplying whatever materials were necessary. Due to the ever present financial problem the sample was limited. There were about one-hundred-eighty children involved each year and a follow-up was possible from the first-grade through the third.

The introduction of the "innovation" - i.t.a. and the number of studies involving i.t.a. over the past several years indicates that at least a great interest in improving reading instruction is taking place. It was hoped that this study would bring to light the answer to the question of the relevance of grapheme-phoneme correspondences for the teaching of reading, especially in the light of the reports that young children have been taught to read with little regard for such rules.

## GENERAL DESCRIPTION OF THE SUBJECTS:

The children on whom the study was conducted reside in the San Juan Unified School District, suburban Sacramento, California. This could be considered one of so called "bed-room" communities. On the whole, the community is average middle-class with pockets of upper-middle and high as well as those considered culturally deprived or less fortunate. To insure that the pupils in both the experimental and control groups were representative of the population schools were selected on comparability of areas so that low, middle and upper socio-economic children would be included in each group.

The first-grade pupils were assigned to classes on the basis of an articulation card filled out by the Kindergarten Teachers at the end of the school year. Indication was given of the child's progress and his readiness for first-grade. These were evaluated in the following manner: (1) above average; (2) average; and (3) below average. The teacher could also indicate whether the child could recognize and write his name; recognize colors; count objects up to ten; handle scissors; cut and paste; general coordination; and ability to follow directions. After the cards were arranged according to the three classifications, the assignment was random with the exception that a proportion of the group falling in each of the three levels was assigned to each classroom. One of the first-grade classes in each of the schools selected to take part in the study was then designated as the i.t.a. class. A matched group of pupils was selected from the other two or three first-grade classes in these schools. They were matched on sex, chronological age within four months and I.Q. within four points. Since this was a longitudinal study the sample was replicated in the second and third years. A second matched control group was also used during the first two years of the study in an effort to control the Hawthorne Effect and knew nothing of the study comparing the progress of the children in i.t.a. and those using T.O. (Eller-1964) stated that less tangible bias may result from the differences in teacher-pupil enthusiasm if the experimenters know that they are participating in a new and different program while the controls go about their class work as usual. (Kerlinger, 1964) also stated that "if a learning study is being done, one or more controls are essential. Almost any change, any extra attention and experimental manipulation or even the absence of manipulation but the knowledge that a study is being done is enough to cause the subjects to change." (Borg-1963) stated that the Hawthorne Effect decreased as the novelty of a new method wears off. Studies extending over two or three years can be relied upon somewhat more in evaluating the effect of a new technique.

The teachers of the experimental group were selected from a group who indicated an interest in teaching beginning reading using i.t.a. and who would be available to attend a workshop conducted during the summer months. The teachers of the control groups were also given the opportunity to volunteer to take part in the experiment or in a district-wide testing program to determine the reading ability of first-grade pupils. Special meetings and in-service type workshops were set up for the experimental and control 1 teachers at various times during the year. The teachers of the second control received no special treatment other than regular grade-level meetings held district-wide. There were many visitors during the first year of the study, this being the first in the area. An attempt was made to equate the number of visitors in the control 1 classes also.

In late August a special meeting was held for all of the parents of first-grade children in the schools which had i.t.a. and control 1 classes. At the time of the meeting the class lists had not been posted. The parents, therefore, were unaware of their child's placement. They were asked to notify the Principal if, when receiving the notice of placement, they preferred not to have their child in i.t.a. During the three years, only one parent made such a request and there was a waiting list to fill possible vacancies in the i.t.a. classes.

TESTING INSTRUMENTS:

The following testing instruments were used: (1) *Gates Primary Reading Test* at the end of the fifth and ninth months, (these were administered in the media in which the child was reading at that time); again during the second week of school in second-grade as a test-retest to determine loss over the summer months; *Gates Advanced Reading Test* only in T.O. at the end of the eighteenth and twenty-seventh months of instruction. (2) *The Botel Reading Inventory-Phonics Mastery Test, Levels A and B* at the end of the seventh month of instruction; (3) a spelling test of consistent or regularly written words devised by the writer was given at the end of the eighth, sixteenth and twenty-seventh months of instruction as well as a standardized test at the end of the twenty-eighth month in school. During the second and third years of the study the Stanford Reading Tests were administered state-wide consequently these scores could also be used.

We had decided to use the Early-to-Read Series and the accompanying workbooks. During the first year the materials in i.t.a. were slow coming. There were very few library books available at the beginning of the year. Teachers used old pre-primers and transliterated them in order to have supplementary reading. As the study progressed throughout the year and on into the second and third years more and more became available. By the end of the first year each i.t.a. classroom had at least sixty books other than the basic texts of the Early-to-Read Series.

Just as the first year was coming to an end I was notified that I was the recipient of a Fulbright Grant to teach for one year at Moray House College of Education in Edinburgh, Scotland. This was an opportunity that could not be refused. Everything had been set up for the second year - all materials ordered, workshops taken care of, etc. I knew it would be in good hands. The Principals of the schools involved agreed to follow through with the testing program and they had the help of the Reading Consultant. The teachers also, after one year, were no longer insecure in their teaching and as a matter of fact were so convinced of the benefit of i.t.a. that if it had been suggested that they go back to T.O. there would have been much dissatisfaction.

I was most fortunate to have had the opportunity to observe and work with teachers in Edinburgh and surrounding areas who were using i.t.a. and also supervise a Primary I class in the Demonstration School as well as students who were preparing to be teachers. It gave me a chance to compare methods and materials. We had some of Downing's material in our schools during the first year and more had been ordered for the subsequent years, however here was an opportunity to use a transliterated basal reader and compare it with the progress of children using the same reader in T.O. I tested children at the Primary II level after sixteen months of instruction with the Gates Primary Test, both transliterated and regular forms. These children had been taught to read using i.t.a. by the Look-Say method. To me they were losing the benefit of a phonemic alphabet. Downing suggests that the children discover for themselves the patterns and consistencies of the augmented alphabet. I did not find this to be so in many cases. I feel that while some children do arrive at these generalizations by themselves, a great many need to have them pointed out. There was no planned program for making the transition to T.O. reading. The children merely read the last *Janet and John* book in i.t.a. and then reread it in T.O.

On my way to Scotland I stopped in Bethlehem to talk to Dr. Mazurkiewicz and asked him if he would mind if I used many of his ideas while there. In testing these children in Primary II after sixteen months of instruction, I found them to be reading at about the same level as our children at the end of nine months. It is true however, that the children entered Primary I at an age when most of our children were still at home or just entering Kindergarten. During my stay at Moray House I used a more formal approach with the children who were ready as to the sound-symbol relationships. During the second term many of the children no longer needed their little "Tins" containing the words they were to know before going on with their reading. They were sounding them out for themselves. Although there is no pressure put on the children at this level to learn to read, they were so enthusiastic about reading and writing that many of them spent more time at these activities than at the various other "play" activities provided such as clay, wood work, water play, easel painting, cut and paste, etc. The Headmistress of the school had been disappointed the previous year because she had expected more progress in creative writing. This year the children were writing stories several pages long and making books by writing a story and illustrating it. I came back to America convinced that we do not give our Kindergarten children the opportunity to move ahead as fast as a great many are capable of doing.

At the end of the year, approximately one-third of the Primary I class had made the transition to T.O. I could truthfully say that all of the children were reading at some level whether it would be Pre-Primer (as measured by our readers - or above. These children were tested with the Gates Primary Reading Test as well. Those still in i.t.a. took the transliterated form. This time the progress could be closely compared with the results of the first-grade testing the year before in California. There were children reading in the traditional orthography who scored a high second-grade or even third grade level. One little boy who was five years eight months at the time of testing, scored in the 99th percentile in each of the subtests. Of course there was one difference between these children and a typical classroom in the San Juan Unified School District - these children were above average in intelligence. They were given a test before admission to the Demonstration School and were accepted if they were below average on one condition - they had an older brother or sister in the school. Consequently, the average I.Q. of the group was well over 110.

I did come away from my experience, however, determined to encourage our schools to do more for the child who comes to school (especially in Kindergarten) ready to read.

In September 1966, on returning to California, I went back to the classroom - this time, by special request, with a large group of children considered "not-ready" for reading by their Kindergarten teachers. The other i.t.a. groups were formed as they had been the two previous years. As requested, many new books had been added - especially for the special group. These included *The Book For Me to Read,* both red and blue series; the *Nicky Books;* the *Downing Vocabulary Extension Series* and *Transfer Readers;* as well as all of the other Downing Readers in a larger number. An additional number of library books were made available for all of the i.t.a. classes as well as a number of the Scott-Foresman *New Horizon* Readers and the accompanying *Pictionarys* for the children who made the transition. After spending a year in Scotland with no workbooks of any kind, I found many of the workbooks to accompany the *Early-to-Read Series* superfluous.

In addition to having a group of slow-starters in this one i.t.a. group, there were also four little boys with severe speech problems - one stutterer and three with very infantile speech patterns.

SUMMARY OF RESULTS OF THE STUDY:

Looking back over the three years we found that approximately fifty to sixty percent of the children made the transition in the first-grade. All of them made the transition in the second-grade. The first year one girl was retained. Her I.Q. according to the SRA Primary Mental Abilities Test was 74. At the end of the second year a boy was retained in the second grade. He was also considered to be below average. Both of these children had made the transition in the second-grade however. In other words, it actually took the little girl three years to make the transition to the traditional orthography since she spent two years in the first-grade.

Three little boys were retained in the first-grade at the end of the third-year of the study. They were in the special group and had been designated as "not ready" for reading instruction. In November they were administered the Wetman and Frostig tests and found to have gross perceptual difficulties. They spent almost the entire year in a readiness program. They were just beginning to show some progress at the end of the school year. The other boy was in a control class and the twin of one of the boys retained in the i.t.a. class.

It was interesting to note the remarks of the Speech Teacher concerning the children in i.t.a. who went to her twice a week for speech therapy, in comparison to children from the regular classrooms. She indicated that the boys from the i.t.a. class made more progress because they listened to the sounds and made more of an attempt to duplicate them and correct their speech. They made progress because they were interested in playing the "sound games" and put a great deal of effort into it. They returned to the classroom more quickly than did the children who had learned to read using T.O.

During the third-year of the study the Botel Word Recognition Test was administered to a sample of the population. Children who were still reading in i.t.a. were given the words to read in the transliterated form.

One of the Hypotheses stated that there would be no significant difference in the reading ability of the children according to their Intelligence (mental ability).

The questions asked and the results were as follows:

Question 1. Is there a measureable difference in the reading ability of children being taught to read using i.t.a.? The three year evaluation shows that children in i.t.a. did advance more rapidly in reading and achieved significantly superior reading skills at an earlier time. Results of the Botel Word Recognition Test suggest that the experimental group was reading about one-grade level ahead of the control group. During the two years in which a second control was used, both the experimental and the control group within the same schools made greater gains in reading

An average of fifty-percent of the children learning to read using i.t.a. made the transition in the first-year and had no difficulty in making the transition to readers in the traditional orthography.

While not always significant, greater comprehension was indicated by both standardized tests in comprehension (Gates and Stanford) as well as instructional levels and reader level achievement indicated by teacher and the Botel Word Recognition Test.

Question 2. Will the use of i.t.a. develop in the children a spelling "attitude", or skill, superior to that of the children using T.O.? The children in the experimental group developed very high spelling skills (better described as encoding). The superiority was first evident at the end of first-grade when the test of regularly spelled words was given and was maintained during the second and third years. This superiority in spelling was also suggested by the results of the standardized spelling test dictated at the end of the third-grade, which consisted of both regularly and irregularly spelled words. The teachers indicated that the transition to T.O. spelling after the child had made the transition in reading was relatively easy. There appeared to be a carry-over into their creative writing and by the end of the third-year, only in a very few instances did an i.t.a. spelling occur.

Question 3. Does i.t.a. develop superior word-attack skills and through this make more independent readers? Only in the first part of the test - Consonant Sounds, did the children in the control classes come close to matching the i.t.a. children in ability. The children in the experimental group were far superior in hearing the sounds of blends, digraphs, and vowels. Being proficient in these word-attack skills developed in the i.t.a. children an eagerness to read; on the whole they read more independently and widely; wrote more prolifically; were more independent; and had more stick-to-itiveness than did their counterparts.

Question 4. It is assumed that children lose some of their reading ability over the summer months. Does this assumption hold true for the children learning to read using i.t.a. as well as those using T.O.? Both groups, regardless of media, dropped in reading ability during the summer between first and second grade. However, in many instances the i.t.a. children lost more than their counterparts. This could be due to the fact that each year there were about fifty-percent of the children still in i.t.a. and there were no i.t.a. materials available to them during the summer months, at least not during the first year. At the end of the second and third years parents were urged to buy some of the Scholastic Paper Backs in i.t.a. for use during the vacation. Although more materials are becoming available, it is impossible to buy books printed in i.t.a. in book stores, toy stores, or any place where books are sold, as in Great Britain. Our children are at a disadvantage in this respect.

Question 5. Will the children at the end of the second and third years retain their superiority in reading achievement? The results indicate that while the differences were not significant when comparing the girls in i.t.a. and T.O. groups the scores were still higher at the end of the second year. The boys, however, maintained a significant difference in both word recognition and paragraph meaning. At the end of the third year the gap had narrowed for the girls and while there was a slight difference in some instances in favor of the i.t.a. group none of them were significant. For the boys, after three years in school, the difference was only significant in the Word Recognition subtest. However, in comprehension subtests the difference was in favor of the experimental group which would suggest that not only does the use of i.t.a. in beginning reading give the boys a better start, but that they maintain this lead during the first three years of school.

Question 6. Which ability group will derive the most benefit from the use of i.t.a. as the media for learning to read? When collecting the data according to I.Q. it was found that children in the upper-third of the group at the end of the first-grade derived the most benefit from learning to read using i.t.a. whether it were boys or girls. In the middle-third the difference was significant for the girls in Word Recognition and Sentence Recognition. At the end of first-grade the girls in the lower-third scored significantly better in Word Recognition. In other words all girls, regardless of intelligence, benefitted in what Downing calls the "Lower Order" decoding abilities. Comprehension skills of the boys and girls with high intelligence were significantly higher. By the end of the third-grade there were no significant differences for the groups. Since there were so many inconsistencies, and very little regularity indicated by the scores on the tests given, it is difficult to make any generalizations. It was evident however, that the girls in the upper-third of the experimental group, over a period of three years did derive the most benefit from the use of i.t.a.

Question 7. Quite often in a first-grade classroom you find an over abundance of girls in the top group and more little boys in the slow groups. Will i.t.a. narrow this gap? Is it possible that the use of i.t.a. will develop just as many good readers among the boys as among the girls? In most instances the girls were found to be superior to the boys. However, in many cases it could be said that the girls' reading ability was not significantly better than the boys whether it was an i.t.a. or a control group. Teachers indicated that they seemed to have a fewer number of boys reading in the slow group when using i.t.a. than they had previously experienced.

The study has shown that the i.t.a. children do score significantly better in many of the tests and their subtests. It also has shown that the i.t.a. children did not score significantly more poorly on these same measures.

i.t.a. is not a panacea. While research shows that i.t.a. has brought some children an important advantage in their learning to read, it does not show it to be a cure-all for all of our reading problems. A reasonable estimate on the basis of the test data and teacher reaction would be that failure in beginning reading is probably reduced about one-fourth of what it is in classes where T.O. material is used. Needless to say, there are still children who make a poor response when i.t.a. material is used.

It seems reasonable to assume that i.t.a. will never be used universally no matter how effective it may be. It is hoped however that, as in the past, the best of what comes from the research and use of i.t.a. will become a functional part of the reading program in the future.

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## 4. FOURTH YEAR RESULTS -- BETHLEHEM I.T.A. STUDY*

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Third year results and conclusions as noted in the Comprehensive report, *The Initial Teaching Alphabet in Reading Instruction*, published in early 1967+, indicated that children in i.t.a. material:

1. Advance more rapidly in reading and writing experiences; achieve signi-

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* (A continuation of the longitudinal three-year evaluation of i.t.a. begun under sponsorship of the Fund for the Advancement of Education. The continuation study is supported by a Title III grant for the demonstration of the use of i.t.a. in beginning reading and writing and for the establishment and evaluation of a language arts curriculum post-i.t.a.)

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ficantly superior reading skill at an earlier time; read more widely; and write more prolifically, more extensively, and with a higher degree of proficiency, than their T.O. counterparts and have no difficulty in making a reading transition to T.O. material when they are allowed to develop sufficient confidence and efficiency.

2. Develop very high spelling skill in i.t.a. (better described as encoding) fairly early. The transition to spelling in T.O. appears relatively easy in the two years subsequent to initial reading when directed instruction and guidance in spelling are given, and the achievement in spelling on standardized tests and in creative writing is significantly better than the achievement of T.O. taught children at the end of the second and third years under such an instructional program.

3. Achieve word recognition in T.O. at the end of the first and second years significantly better than T.O.-taught children but this superiority is not retained at the end of the third year.

4. Show lack of the inhibitions in writing which are commonly found early in the first year, and this expressiveness continues into the second and third years. Significant accomplishments are found in these children's creative writing in terms of the number of running words and the number of polysyllabic words used. No differences in the use of the mechanics of reading were found between the i.t.a. and T.O. taught populations.

5. Have higher comprehension as this is indicated by instructional levels and reader level achievement in all years. Standardized tests in comprehension show that the i.t.a. population does not differ from the T.O. population.

6. Have experienced no deleterious effects on such measures as rate of reading or accuracy of reading, suggesting that the i.t.a. to T.O. procedure establishes no negative characteristics, no hindrances on later achievement.

Conclusions of the Fourth year, based on the results obtained on the 1963-64 and 1964-65 populations, support the major findings but contradict conclusions 3 and 5 in that positive and statistically significant findings exist in the areas of vocabulary - word recognition at the third and fourth grade levels, while significant differences in comprehension in favor of the i.t.a.-taught population are found in the third year results of the replication population. The conclusion that the longitudinal effect of i.t.a. appears to diminish by the third year when no unique post-i.t.a. procedures are used is refuted, and the longevity of effects of a beginning program of reading and writing in i.t.a. is as yet undetermined.

## GENERAL PROCEDURES AND INFORMATION

A two-week workshop on linguistics the summer of 1966 provided for teacher exploration of own language patterns using tapes; knowledge about dialects and intonation patterns; a study of the science of linguistics; the development of understanding of children's language patterns and techniques for improving them. Workshop leaders were Dr. Carl Lefevre and Dr. Helen Lefevre.

Six Saturday workshops for teachers in the project area were structured to improve skills in the areas of intonation and stress, transformational grammar, motivation, writing skill and poetry.

## THE 1963-64 POPULATION IN ITS FOURTH YEAR

Fourth grade teachers of the 1963-64 population were given no special instruction in i.t.a. but did participate in a half-day session prior to the start of the school year in a workshop devoted to:

1. the continuation of a functional approach to teaching spelling in which spelling errors in compositions and various writing activities would serve as the focus for the spelling program;

2. the continuation of teaching the use of the dictionary, an emphasis on a study of prefix, suffix and roots in word study, and a revision of word analysis skills emphasizing spelling patterns rather than phonic rules;

3. a modification in the use of the basal reader to emphasize reading, thinking, and study skills;

4. a continuation of the emphasis on expanding the child's experiential horizon by the wide use of literature materials to supplement the basal program;

5. orientation to combine the development of phonics and structural analysis as functions of the spelling program;

6. encouragement to adopt and adapt ideas from the workshops to be structured during the year -- intonation and stress, transformations and generative grammar, motivation, writing skill, and poetry -- to the instructional program as a measure of expansion of the language -- arts orientation of the continuing modified basal program.

## PROGRAM OF INSTRUCTION

Teaching was paced to individual rates of learning as established in the prior year. The reading program was paced similarly and resumed at the point where the children had ended the school year. Although $4^1$, $4^2$, and $5^1$ materials were being used extensively in the earliest period of the fourth grade, the reader a child completed was not considered to be of specific concern. The teacher was encouraged to move children as naturally as possible through sequential activities while expanding his experience world using a study of literary forms, literature, wide use of library, etc.

## EVALUATIONS

The survey of instructional levels as reported in Table I, obtained at the end of May, 1967, suggest that the plateauing effect noted in prior years (so far as material usage is concerned) was continuing. Since a number (94) of children in the T.O. population had received remedial instruction during the course of the year in i.t.a. materials, a meaningful comparison would be precluded if this portion of the population were included in the total number. The elimination of this portion of the population changes the original population makeup considerably and comparative results, because the bottom range of achievement is changed markedly, are difficult to interpret.

It must be remembered also that teachers were encouraged to move into literary readers upon the completion of a basal reader before moving into higher graded materials and to emphasize wide supplementary reading in an individualized reading approach rather than be concerned solely with basal materials. The results of this instructional level survey on the unequivalent populations (differences in socio-economic status, number of repeaters in each population, and number of bilingual problems) could be erroneously interpreted to suggest a slight advantage for a T.O. beginning, when the small percentage who had achieved sixth reader status is noted, were the lack of equality between the populations not known. Despite this difference in the population, it is interesting to note the marked difference in instructional level achievement of the bottom portions of these populations when it is remembered

### TABLE I

Fourth Grade Instructional Laws of the i.t.a. and T.O. Unequivalent Populations as of May 25, 1967, remedial readers removed

|  | i.t.a.<br>N=273 | T.O.<br>N=805 |
|---|---|---|
| T.O. Reader Level | Percentage | Percentage |
| $6^1$ | ---- | 1.9 |
| $5^2$ | 3.3 | 8.4 |
| $5^1$ | 35.5 | 22.3 |
| $4^2$ | 12.8 | 11.1 |
| $4^1$ | 35.8 | 38.8 |
| $3^2$ | 10.2 | 11.6 |
| $3^1$ | 2.1 | 5.4 |

that all "remedial readers" were excluded.

Table II, representing instructional level data from matched pairs (matching within one point on intelligence, on socio-economic status and sex) shows a dramatic achievement difference in the population.

### TABLE II

Instructional Levels of matched pairs in the 1963-64 population as of May, 1967

|  | i.t.a.<br>N=50 | T.O.<br>N=50 |
|---|---|---|
| T.O. Reader Level | Percentage | Percentage |
| $5^2$ | 2 | - |
| $5^1$ | 46 | 24 |
| $4^2$ | 6 | - |
| $4^1$ | 36 | 54 |
| $3^2$ | 10 | 22 |

While marked differences at the upper and lower points in favor of the i.t.a. population exist and suggest the values of a beginning i.t.a. program on 4th year achievement, the data suggest that a beginning program in i.t.a. has longitudinal effects of major proportions into the end of the fourth year of instruction.

Standardized testing using the *Iowa Test of Basic Skills*, dictated spelling tests, and samples of written work, were obtained during the last weeks of May to evaluate reader level achievement of the pupils and to determine whether observations of a maintenance of the improved spelling and writing behavior were correct.

TABLE III

Means, Standard Deviation of the Subtest achievements of the i.t.a. and T.O. 1963-64 population on the *Iowa Test of Basic Skills*, remedial readers removed.

| | i.t.a.<br>N=251 | | T.O.<br>N=823 | | |
|---|---|---|---|---|---|
| May, 1967 testing | I.Q.=104.73 | | I.Q.=105.18 | | |
| | M. | S.D. | M. | S.D. | t |
| vocabulary | 29.33 | 6.95 | 27.55 | 7.29 | 3.49* |
| reading comprehension | 43.43 | 13.31 | 43.89 | 13.32 | - .48 |
| spelling | 27.94 | 7.16 | 28.61 | 7.02 | -1.34 |
| capitalization | 27.83 | 6.82 | 27.89 | 7.03 | - .02 |
| punctuation | 23.92 | 7.71 | 24.16 | 7.23 | - .46 |
| language usage | 20.51 | 6.44 | 20.55 | 6.36 | - .08 |
| map reading | 17.55 | 5.29 | 17.36 | 5.25 | .51 |
| reading graphs | 14.78 | 4.88 | 15.07 | 4.62 | - .93 |
| using reference materials | 31.54 | 8.29 | 31.89 | 8.34 | - .60 |

Though the populations are not equivalent (in that a great percentage of the i.t.a. population were repeaters of 1st grade, having previously failed in T.O., had bilingual difficulties, and/or were from low socio-economic circumstances), Table III shows a statistically significant difference in favor of the i.t.a.-taught population on the measure of vocabulary with no significant difference in favor of the T.O. population. This is in contrast to the instructional level data on the populations (Table I) but tends to confirm the data of Table II. The superiority exhibited by the i.t.a. population at this point in time indicates a persistance of achievement which is unexpected.

Table IV reports Spelling data on the unequivalent population. This test uses the words from the Iowa Test of Basic Skills for the grade level tests. The procedure used was to dictate the words from a second form of the test

TABLE IV

i.t.a. and T.O. population achievement in a dictated spelling test, May 1967 testing 1963-64 population, remedial readers removed

| | i.t.a.<br>N=286 | | T.O.<br>N=836 | | |
|---|---|---|---|---|---|
| | M. | S.D. | M. | S.D. | t. |
| spelling | 26.99 | 6.80 | 25.29 | 9.42 | 3.08 sig. 1% |

* significant at the 1% level

and ask children to write their responses rather than use the test in its proofreading-recognition form. The results of this test indicate that, though the populations are not equivalent, a clear-cut superiority of the i.t.a. population in spelling exists when words are spelled in isolation.

Table V, showing the results of a study of writing characteristics of the i.t.a. population at the end of the fourth year of school, indicates the degree of spelling accuracy which is observable in children's writing. In this case, spelling is examined in the composition of children who are writing in response to a picture-stimulus. It would appear that 96.9% accuracy in spelling when the focus of children's efforts are on encoding ideas or thought is an excellent behavior pattern. No similar results on the T.O. population were sought for the reasons noted earlier. The study made here, however, was done to provide a benchmark of achievement by which to judge the achievement of second and third grade i.t.a. replication populations in the development of language maturity as defined by the length of the "T" unit.

TABLE V

Writing Characteristics of the i.t.a. population in May of the 4th of school

| | |
|---|---|
| Total number of words written | 4270 |
| Words spelled correctly | 4170 |
| Mean No. of words spelled correctly | 153.3 |
| Percentage of words spelled correctly | 96.9% |
| "T" units per sentence | 1.73 |
| "T" units length | 6.8 |
| Mean length of punctuated sentence | 11.8 |
| Mean clause length | 6.4 |

It can be noted, for example, that while the T unit length 6.8 of this sample of 4th grade children is lower than Hunt's finding of 8.6 as an index of maturity at the fourth grade, a major difference in the word samples used for each population precludes making a comparison between the two groups. But the establishment of this measure on the same basis for all 2nd, 3rd and 4th graders of this study allows for a comparison between the classes to determine differences in maturity or development of maturity of the groups when the fourth grade findings are used as a benchmark.

## CONCLUSIONS: 1963-64 POPULATION RESULTS

1. Persistance of achievement effects into the fourth year are observable between i.t.a. and T.O. populations who were instructed similarly during their four years of schooling but differed in the medium (i.t.a. or T.O.) used in beginning instruction.

2. Differences in language factors, spelling, vocabulary development, and instructional level status are significant while other positive characteristics are noted.

## THE 1964-65 POPULATION

As noted in the *Comprehensive Report*, constraints on the first year's i.t.a.

population were pronounced. The elimination of these constraints, the addition of more effective supervision provided by increased funds from an office of Education research grant and the elimination of the factor of unfamiliarity with the i.t.a. program are characteristics which make the results of the replication population more reliable than those from the 1963-64 population. Pages 33-56 of the *Comprehensive Report* detail the procedures used and demonstrate the lack of equality of the i.t.a. and T.O. populations. Measures, noted below, are taken to eliminate these characteristics and to provide meaningful comparisons of the populations now in their third year of school.

### PREPARATION OF THE THIRD GRADE TEACHERS

Procedures established in the previous year to orient teachers were again followed for this population and are similar to those discussed earlier, for the orientation of fourth grade teachers. An emphasis on relating spelling errors and the spelling program to the child's phonetic encodings and to i.t.a. forms was made as in the prior year.

### GENERAL OBSERVATIONS

A continuation of procedures used "to carry the child as far forward as he could go" was observed. Greater teacher flexibility and freedom to try ideas demonstrated in workshops was noted. Teacher ideas were shared in grade level meetings, monthly.

### EVALUATION

The survey of Instructional Levels of the i.t.a. and T.O. populations made in May, 1967, as noted in Table VI indicate 44.7% of the i.t.a. population and 34.3% of the T.O. population are achieving above the expected $3^2$ instructional level. It appears that more i.t.a.-taught children are able to achieve higher reader level status than T.O.-taught children even though the i.t.a. population contains a disproportionate amount of first grade repeaters, bilingual problems, and children from low socio-economic homes. That a lesser amount of i.t.a. children read below the expected $3^2$ level can also be seen.

TABLE VI

Instructional Levels of the i.t.a. and T.O. 1964-65 population in their third year of instruction

May, 1966

| | i.t.a.<br>N=735 | T.O.<br>N=508 |
|---|---|---|
| T.O. reader level | percentage | percentage |
| 5 | 1.6 | 2.7 |
| $4^2$ | 18.2 | 15.5 |
| $4^1$ | 24.9 | 16.1 |
| $3^2$ | 24.1 | 26.6 |
| $3^1$ | 25.5 | 33.7 |
| $2^2$ | 4.8 | 4.7 |
| $2^1$ or sta ba2 | .6 | .8 |

Table VII reports data on matched pairs from each population. These data confirm the findings, as noted above, and more clearly demonstrate the persistence of the effects of i.t.a. on later achievement over a large segment of the population.

TABLE VII

Instructional levels of the matched pairs from the i.t.a. and T.O. 1964-65 populations

|  | i.t.a. N=50 | T.O. N=50 |
|---|---|---|
|  | Percentage | Percentage |
| 5 |  | 2 |
| $4^2$ | 4 | 4 |
| $4^1$ | 28 | 10 |
| $3^2$ | 36 | 16 |
| $3^1$ | 24 | 40 |
| $2^2$ | 6 | 14 |
| $2^1$ | 2 | 4 |

Thirty-two percent of the i.t.a. population achieving above the expected $3^2$ reader level contrasts markedly with the sixteen percent of the T.O. population who are achieving similarly. At the bottom, it is noted that eighteen percent of the T.O. population are achieving below the minimal expectancy of $3^1$ as compared to 8 percent of the i.t.a. population. Thus at both extremes, achievement levels of the i.t.a.-taught populations are better than those of T.O.-taught populations.

Standardized test data on the unequivalent populations confirm the findings of instructional level achievement and point up other strengths. The significant differences in vocabulary and comprehension suggest the i.t.a. instruction in first grade is of such potency as to have a lasting effect to at least the end of the third year. This finding, not previously found, might be a reflection of the differences in standardized tests or that the *Iowa Test of Basic Skills*, less restricted in its construction to the scope and curriculum of one or two basal programs (as in the California, Stanford & Metropolitan tests), is a more reliable test of achievement. In any case, had no testing been done until the 3rd year (disregarding lack of equivalency of the populations) and the results then examined, clear cut superiority of the i.t.a. beginning over the T.O. beginning would be the conclusion called for.

When it is further noted that the populations are not equivalent and that their means I.Q. scores differ to some extent, the positive differences in favor of the i.t.a. population reinforce the conclusion that learning is enhanced by the i.t.a. to T.O. procedure, that initial success in learning to read is a potent factor on later achievement.

TABLE VIII

*Iowa Test of Basic Skills* Results of the i.t.a. and T.O.
1964-65 population in their third year

|  | i.t.a.<br>N=658 |  | T.O.<br>N=562 |  |  |
|---|---|---|---|---|---|
|  | I.Q.=110.15 |  | I.Q.=112.04 |  |  |
| May, 1967 testing | M. | S.D. | M. | S.D. | t |
| vocabulary | 24.02 | 5.56 | 22.14 | 6.51 | 5.35** |
| reading comprehension | 35.75 | 11.94 | 33.53 | 12.94 | 3.05** |
| spelling | 23.05 | 6.41 | 22.95 | 6.38 | .27 |
| capitalization | 24.14 | 7.82 | 23.49 | 7.54 | 1.41 |
| punctuation | 21.92 | 7.72 | 21.91 | 8.08 | .02 |
| language usage | 19.05 | 2.17 | 18.58 | 7.55 | 1.14 |
| map reading | 15.39 | 4.41 | 14.95 | 4.69 | 1.69 |
| reading graphs | 13.31 | 4.21 | 12.94 | 4.27 | 1.54 |
| using references | 25.84 | 7.39 | 24.89 | 8.68 | 2.06* |

* significant 5% level
** significant below the 1% level

The maintenance of a superiority in vocabulary development, as noted in Table IX, by the i.t.a. population when matching of the populations is made indicates the strength of the i.t.a. to T.O. procedure on the factor it was designed to affect. The lack of significant difference in comprehension (and on the other skill areas not reported here) is not unexpected since both populations have been instructed similarly.

TABLE IX

Matched pair results of the i.t.a. and T.O. 1964-65 populations on the *Iowa Test of Basic Skills*

|  | i.t.a.<br>N=50 |  | T.O.<br>N=50 |  |  |
|---|---|---|---|---|---|
|  | M. | S.D. | M. | S.D. | t |
| vocabulary | 23.12 | 4.84 | 19.94 | 7.19 | 2.59* |
| reading comprehension | 32.78 | 11.16 | 31.40 | 13.14 | .56 |

* significant at the 1% level

While no differences between the population in spelling (as a recognition or proofreading skill) were noted on the Iowa Test, Table X reports data on a dictated version of an equivalent form of this test. It is noted that the i.t.a. population, though less able than the T.O. population in terms of intelligence and negatively skewed by other factors, achieves significantly better spelling skill than the T.O. population, confirming previous year's findings. It should be noted that perceptual recognition has been positively affected by the i.t.a.-T.O. procedure although the difference in recognition of spelling errors is not significantly different from the T.O. population (i.t.a. mean 23.05; T.O. mean 22.95), and that spelling in isolation is enhanced at this point in time.

TABLE X

Dictated Spelling Test results of the i.t.a. and T.O. 1964-65 population

| | i.t.a.<br>N=709 | | T.O.<br>N=541 | | |
|---|---|---|---|---|---|
| | M. | S.D. | M. | S.D. | t |
| spelling | 24.28 | 8.14 | 22.78 | 9.31 | 3.19* |

* significant beyond the 1% level

Writing samples obtained during this same time as reported in Table X confirms the previous years' findings that the children spell with a high degree of accuracy when writing creatively and when their focus is on expressing thought, not spelling. Spelling has been positively affected rather than negatively as had been presumed by poorly informed critics.

TABLE XI

Writing Sample characteristics of the random samples from the 1964-65 unequivalent populations

| | i.t.a.<br>N=70 | T.O.<br>N=70 |
|---|---|---|
| Number of running words | 8082 | 4085 |
| Mean number of words written | 108.3 | 58.4 |
| Percentage correct spelling | 95.97% | 94.8% |
| "T" unit length | 6.2 | 6.0 |
| "T" units per sentence | 1.96 | 1.68 |
| Mean sentence length | 9.5 | 10.14 |
| Mean clause length | 5.74 | 5.95 |

CONCLUSION: 1964-65 POPULATION

1. Replication studies indicate that reading skill, as measured by vocabulary and reading comprehension, is enhanced by the i.t.a. to T.O. procedure and that this effect persists in instructional levels to at least the end of the third year of school.

2. Spelling, as found in dictated spelling tests is enhanced for an i.t.a.-taught population but appears to be no better than a T.O. child's in free writing at the end of the third year. Since word choice differs in creative writing, the acceptable definition of spelling skill for research purposes is that demonstrated in isolated words. In this respect, the i.t.a. taught child is the superior speller.

3. Matched pair data support the major hypothesis that vocabulary-word recognition is enhanced by the i.t.a.-T.O. procedure.

THE 1965-66 POPULATION

Since all of the first grade, 1965-66 population, were included in i.t.a. instruction, no specific results of the first year were gathered in that no meaningful comparisons could be made except where experimental treatments between two portions of i.t.a. population could be established. Data gathered on a study of mathemagenic behaviors on later testing indicated that standardized tests of comprehension were measures of those elements found in basal reader workbooks and that significant gains in "comprehension" as measured by Standardized Tests could be effected by specified practice.

The 1965-66 population in its second year of school, however, was subject to a study of the effects of curriculum change on writing characteristics as noted earlier, Table V. A linguistics workshop preceeded the writing of a curriculum for the second grade which in turn reflected many of the ideas embodied in the workshop as well as culled from teacher reports, ideas and experiences. Table XII reports the status of the second grade population at the end of the year in reading as measured by the Metropolitan Reading Test.

TABLE XII

The 1965-66 population in i.t.a., a second year

N=1140

| Metropolitan Primary II | M. | S.D. | Grade Equivalent |
|---|---|---|---|
| Word Knowledge | 25 | 9.57 | 3.6 |
| Paragraph reading | 21 | 7.71 | 3.4 |

Writing Samples obtained at December and May points to measure the effect of the revised curriculum on characteristics of children's writing, as reported in Table XIII, suggest that a degree of improvement in language maturity has been effected thru teachers' use of the elements of new curriculum in that changes in the T unit length occur and these changes produce a maturity level which is identical to that found for third grade i.t.a.-taught children (6.2; Table XI) not subject to the new curriculum. It is noted, also, that the second grade May result is not significantly dissimilar from the result found

### TABLE XIII

December and May writing characteristics of random samples from the second grade i.t.a. population

N=49

| | December | May |
|---|---|---|
| Mean No. Running words | 78.79 | 84.10 |
| "T" units per sentence | 1.78 | 1.92 |
| "T" unit length | 5.7 | 6.2 |
| Mean length of clauses | 6.08 | 5.97 |
| Mean sentence length | 11.1 | 11.4 |

for the 4th grade children. (6.85; Table V). Thus it can be assumed that this second grade population is as mature in their use of written language as measured by the "T" unit as third and fourth graders. This maturity appears to be reflected in the population's ability to write clauses which are similar in length to third and fourth grade children. Expansion of the main clause being one of the major emphases in the new curriculum, using transformational and generative grammar approaches, the effect on clause length can be seen.

It should also be noted that sentence length of the second grade i.t.a. population is quite similar to that of the fourth grade population.

## CONCLUSIONS: 1965-66 POPULATION

1. The major findings, that the use of i.t.a. in a beginning reading program produces early and effective reading and writing ability, are confirmed; that this effect persists at least into the second year; and that spelling ability post-i.t.a. is positively affected.

2. The development of a curriculum to meet the needs of post-i.t.a. population in terms of enhancing growth through challenge and the accretion of new curricular skills has a positive effect in developing language maturity and that this maturity is similar to that achieved by populations who have had the advantage of one to two additional years of classroom experience.

## 5. I.T.A. FOR WHOM?

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### INTRODUCTION

Trying to identify the potentially successful i.t.a. pupil is, at best, an ambitious and somewhat hazardous undertaking. The need to do so, however, has been pressed upon us. At the same time, the desirability and the urge to do so are axiomatic and compelling, respectively.

Until very recently, the answer to the question: ***i.t.a.** for whom?* was usually drawn in either black-and-white terms -- proponents and advocates advancing the position that i.t.a. was for all; critics suggesting it was for none -- or it was obscured in exegesis and argument. The answer, it seems, is neither quite so simple, nor quite so complicated. More important, *the* answer, in definitive form, is probably unattainable. Thus, to anticipate *the* answer should, and usually does result in disappointment. On the other hand, to entertain a few tenable possibilities seems worthwhile.

At the Second Annual International Conference on the Initial Teaching Alphabet, Alpert (1965) addressed the conferees on the subject of *Needed Research in i.t.a.* In summary, he said, "probably the most basic question which is reflected in this paper is, 'how can we identify which children would benefit most from learning to read in i.t.a.; which children might learn as well in i.t.a. or T.O. . . . . ; and which children might be harmed by i.t.a. instruction?'" Based on the research which was conducted in Simsbury, Connecticut, this discussion will focus on the question which Alpert raised.

## SIMSBURY i.t.a. PROJECT

The i.t.a. research study which was conducted in Simsbury -- a residential community of 15,000 persons located approximately ten miles northwest of Hartford -- involved over 800 children, most of whom will be entering either grade two, three, or four in September.

The purpose of the study was to compare, over a period that included three school years, the effects of the Initial Teaching Alphabet and traditional orthography on achievement in beginning reading and related language activities. The areas of reading achievement which were measured and compared were word recognition, vocabulary, paragraph comprehension, word study skills, and oral reading (accuracy and comprehension). The areas of language achievement which were measured and compared were creative writing, spelling, and comprehensive language skills (capitalization, punctuation, and usage).

The study was divided into three phases. Phase One dealt with youngsters from the beginning of grade one to the end of grade three and covered the period from September, 1964 to June, 1967. Complete data were gathered on 242 cases at the end of grade one, 202 cases at the end of grade two, and 176 cases at the end of grade three.

Phase Two dealt with youngsters from the beginning of grade one to the end of grade two and covered the period from September, 1965 to June, 1967. Complete data were gathered on 200 cases at the end of grade one, and 174 cases at the end of grade two.

Phase Three was a one year, first grade program and covered the period from September, 1966 to June, 1967. Complete data were gathered on 364 cases.

Thus, over the three-year course of the project, complete data were collected on a total of 806 first graders, 376 second graders, and 176 third graders. At the first grade level, the figures represent a total of 34 classes which served as either i.t.a.-treatment groups or T.O.-treatment groups.

It should be emphasized that each succeeding phase of the study was built upon the preceding phase(s). Thus, there were some questions, or hypotheses, which were common to all, and some (such as those raised by Alpert) which were unique to one. The same can be said for certain tests, materials, and procedures. More important, each succeeding phase was characterized by a further refinement of all procedures and controls, a more discriminating testing program, and a larger i.t.a.-treatment population. An important point to bear in mind here is that each phase was a study in itself and, at the same time, an integral part of the larger design.

In all instances, classes were comprised of randomly selected children who had been divided into two groups which were matched on the basis of a number of variables including intelligence quotient, reading readiness scores, kindergarten experience and kindergarten teacher ratings, chronological age, and sex. In matching the two groups, individual as well as group tests were used. The primary measures of learning potential and pre-reading capability were the Otis Mental Ability Tests, the Metropolitan Readiness Tests, and the Murphy-Durrell Diagnostic Reading Readiness Tests.

In all three phases of the investigation, the medium of instruction for the i.t.a.-treatment was the Initial Teaching Alphabet, and the core of the reading program was the *Early-To-Read i/t/a/ Series* by Mazurkiewicz and Tanyzer. For the T.O.-treatment, the medium of instruction was the conventional 26-letter alphabet which characterizes American-English, and the core of the reading program was the *Ginn Basic Reading Series* by Russell and others. In two phases of the study, the conventional, basal reading program was supported and intensified by strong, complementary phonics supplements, and the inclusion in grade one of the normal grade two vowel program.

The post-transition program for i.t.a.-instructed children, as well as the grade two and three program for both treatment groups, included higher level basal readers, individualized reading supplements, literary readers, and skill texts.

In measuring achievement, individual as well as group tests were employed. Major post-test instruments included the Gates Reading Tests, the Stanford Achievement Tests, the Iowa Tests of Basic Skills, and (in one full phase of the study) the Spache Diagnostic Reading Scales. The latter were administered individually to the entire sample at the end of grade one and again at the end of grade two. All final tests were administered in traditional orthography.

Writing achievement was measured by means of written samples obtained from similar classroom episodes. All samples were subsequently typewritten, corrected for spelling, coded, and submitted for multiple ratings to a panel of judges. The data from the writing samples were quantified for statistical analysis and interpretation.

The t-test statistic was used to evaluate mean differences in performance between treatment groups on each of the measures of achievement, and to study results of subgroups formed on the basis of initial IQ scores. In testing hypotheses, the .05 level of significance was observed. In addition, correlation techniques were employed to determine the extent and significance of the relationships which existed among pre-reading variables, and between the various measures of pre-reading capability and subsequent reading achievement.

## SUMMARY OF FINDINGS

### Group Results

Although the results were not entirely consistent from year to year, or from group to group, a discernible pattern of group performance and achievement did emerge and can be reported as follows:

Grade one end-of-year, and grade two beginning-of-year achievement results almost invariably showed differences favoring the i.t.a.-treatment. These differences were significant in the areas of word recognition, oral reading, and creative writing.

Grade two end-of-year, and grade three beginning-of-year results revealed a pattern of no significant differences between treatments in most areas. The two major exceptions were word recognition and creative writing where significant differences favoring the i.t.a.-treatment tended to hold.

End-of-grade-three achievement results indicated no significant differences across the board.

### Subgroup Results

The analysis of achievement results of subgroups formed on the basis of mental ability indicated that, in grade one, i.t.a. pupils in the high and average IQ ranges performed significantly better (in two of the three phases of the study) than their T.O. counterparts in word recognition and oral reading. For the low IQ third of the grade one samples, there were no significant differences in performance.

The analysis of subgroup results in grades two and three showed no significant differences in performance at any IQ range.

### Correlation Analysis

Correlations which were obtained during the course of the study tended to cover the range from low, to moderate, to high. Relatively good correlations -- the highest obtained -- were found between intelligence and several dimensions of measured reading achievement, and between the learning rate subtest of the Murphy-Durrell and several reading dimensions. For the most part, however, differences between the correlations for the two treatments were not significant. There were only three specific exceptions, all of which favored the i.t.a. treatment and all of which pertained to grade one. The three exceptions were one of the correlations between IQ and oral reading, one of the correlations between auditory discrimination and word recognition, and one of the correlations between learning rate and word recognition.

## i.t.a. FOR WHOM?

Carving out of the research and the findings the data which appeared most germane to the topic, and mindful of the fact that other investigators have reported similar findings, the easiest part of Alpert's question to deal with concerned which children might learn as well in i.t.a. or T.O. Based upon a careful examination of test protocols and such other factors as school attendance patterns, health records, and teacher ratings and observations these children can be described in terms not at all surprising.

The successful first grade i.t.a. pupil, like the successful first grade T.O. pupil, had average or better than average intelligence; scored in the upper two quartiles on most measures of reading readiness; possessed average or better than average health; attended kindergarten; was judged by the kindergarten teacher to be sufficiently mature and ready to profit from reading instruction; functioned with no unusual speech or hearing difficulties; appeared reasonably well adjusted socially and emotionally; displayed a liking for the teacher and school; exhibited adequate to excellent oral language facility; and, more often than not, was female. Thus, there would appear to be little reason to doubt that the same general factors which contributed to success in i.t.a. also contributed to success in T.O.

This not-at-all-extraordinary observation brings us back to the first part of Alpert's question, namely, which children would benefit most from learning to read in i.t.a.? The answer seems to be: the children who would be successful in either medium, the children hereinbefore described. For these youngsters the question that should be answered is: why i.t.a.? There would seem to be at least three overriding reasons.

First, it provides a strong, grade one program. Most of the average and better children get off to a faster start and outdistance their T.O. counterparts in the early stages of instruction. This statement is supported by the findings of the Simsbury study, and by the findings of scores of other investigations. The crucial problem here, of course, is how to maintain the early gains. In the final report on the Lehigh-Bethlehem Evaluation-Demonstration Project, Mazurkiewicz (1967) stated: "Because it can reasonably be expected that most achievement differences will diminish in time when no unique post-i.t.a. procedures are used, a lack of positive longitudinal effects of i.t.a. at some future period does not negate its use, nor diminish its established values." Accurate as Mazurkiewicz's statement may be, it leaves something obvious unsaid: namely, that the search now, it would seem, should be for "unique post-i.t.a. procedures," and for reducing or eliminating what Downing (1967) referred to as "the plateau or regression effect" that occurs at the transition stage. (Downing maintains that "what is urgently needed now is a reappraisal of the i.t.a. writing system itself.")

It would appear that the concept of a "faster start" should be part of the next wave of research in beginning reading. One of the most significant outcomes of the national first grade reading study was the strong suggestion that techniques which fostered and encouraged a faster start were not only possible, but desirable. And here consideration should be given to the possibility that the early gains of the i.t.a.-treatment might very well be attributable to the stepped-up program of current i.t.a. reading materials, rather than to the Initial Teaching Alphabet per se. A good example of precisely this kind of finding was reported by Tanyzer and Alpert (1966) who, in one of the 27 USOE studies, found that on all post-instruction measures of achievement, grade one children using *Early-To-Read i/t/a/* materials or *Lippincott* materials outperformed children using the *Scott, Foresman* materials. Tanyzer and Alpert concluded that this was probably due to the fact that the *Early-To-Read i/t/a* and *Lippincott* programs utilized a more analytical approach than the *Scott, Foresman* program, and that this fact necessitated the teaching of many more skills in grade one than are usually taught in the more conventional programs. They further concluded that:

> Those children taught to read in the *Scott, Foresman* basal series will, eventually, be taught the same skills developed in the *Lippincott* and *Early-To-Read i/t/a/* readers, but many of these skills will not appear until second or third grade within the program . . . Hence, the significant differences in achievement in favor of the *Lippincott* and *Early-To-Read i/t/a/* series observed in this study may not be maintained indefinitely.

Until, however, the more conventional programs step-up their pace, the "faster start" remains an attribute of i.t.a. and the methods and materials associated with it.

The second reason favoring i.t.a. is the freedom of written expression which i.t.a. pupils evidence. For those interested in reading achievement only, the writing facility is a dividend; for those concerned with the total language development of children, the capacity to express oneself in writing is an apparent and undeniable plus-factor.

The final, overriding reason in favor of i.t.a. is a direct outgrowth of the two that have been mentioned, is based almost exclusively upon observation, and is concerned with attitudes. Children who get off to a quick and relatively easy start in reading and writing thrive on their early successes; these accomplishments, in turn, help to promote self-assurance, confidence, and a good attitude about school and learning. On this point, Block (1967) provides us with food for thought:

> Even if children scored no higher on traditional reading measures, perhaps the stimulating materials made possible through a modification of the alphabet . . . makes the child's first year or two in school more rewarding, more meaningful and intellectually challenging. This, at least, is what the classroom teachers subjectively report. If there is *no danger* in the use of i.t.a., as the evidence suggests, then perhaps it is justifiable to change an alphabet simply to make the child's initial exposure to the formal aspects of education more rewarding and stimulating. In such a setting, is it not possible to develop in children a greater *love* of reading even if their scores on our traditional reading tests may not measure this?

The most difficult part of Alpert's question to come to grips with was the final part: which children might be harmed by i.t.a. instruction? The difficulty was in assessing the meaning of "harmed." Although Block maintained that the evidence suggested there was no danger in the use of i.t.a., it does appear that for certain youngsters, i.t.a. and, perhaps more accurately, current i.t.a. materials are inappropriate. Their use with these youngsters, therefore, might very well be termed harmful.

Based upon the data and the evidence alluded to earlier, it was possible to describe the unsuccessful i.t.a. pupil in about the same terms needed to describe the unsuccessful T.O. pupil. These were children deficient in a cluster or combination, or perhaps just one or two of the factors that characterized the successful pupil. These were children of low intelligence, dependent upon a slow pace and a great deal of repetition, neither of which characterized i.t.a. materials; these were children whose learning rate or retentive powers were limited or impaired -- for them, the i.t.a. materials were overwhelming; these were children who exhibited poor auditory discrimination and were lacking in the ability to combine sound components in words -- the need for greater reliance upon a sight vocabulary and more repetition of fewer words and word elements was evident; these were children who were manifestly "slow", and manifestly frustrated.

To be sure, these were youngsters who would, and did, have difficulty learning to read in T.O., but because they had difficulty and encountered frustration in i.t.a., the question must be asked: why confound their problems and confuse them (for they were confounded and confused, especially at the stage of transition) by *automatically* placing them in i.t.a. in the beginning?

This is definitely an area where more critical and careful research is necessary, but at this time it appears that for the child whom we can with some certainty foresee a period of difficulty in learning to read, the wholesale and indiscriminate use of i.t.a. as presently constituted and programmed seems inappropriate.

For those for whom we see problems, we should rely more upon careful and accurate diagnosis of the difficulty, and the selection of appropriate remedies. For some children, i.t.a. might very well be the appropriate remedy, but to determine that beforehand would be a serious mistake. It would suggest that the i.t.a. approach was so distinctly better in all situations and under all conditions than other approaches, that it should be considered the single best way, and the way to be followed exclusively.

Finally, for children who come to school reading, it appears that exposure to i.t.a. would be superfluous. More research, however, still needs to be done in this area, also.

In conclusion, it appears that the time-worn, but true assertion that there is no one "best way" to teach reading to all children has not been altered by the arrival of i.t.a. and i.t.a. materials. On the other hand, the use of the Initial Teaching Alphabet has proved worthwhile and effective for the large majority of youngsters who have been exposed to it.

Most important, the Initial Teaching Alphabet and the materials which have accompanied it have shown us that we can and should raise our expectation of pupil achievement and accomplishment in beginning reading and writing. This fact may ultimately prove to be i.t.a.'s most important contribution to beginning reading instruction.

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## C. I.T.A. IN CANADA

Since Canada represented the host country for the Fourth International i.t.a. Conference, it seemed appropriate that local experience with i.t.a. in Canada be included in the conference. It is also appropriate since some critics of i.t.a. have suggested that the results of studies especially in Great Britain may not be applicable to the United States where there is a different educational system and level of economic affluence. Canada represents still another context in which i.t.a. is being used, and its success must be examined. In Quebec, one would be interested in the role of i.t.a. with children who are exposed to both English and French sub-cultures, although this problem was not investigated in the presentation of the i.t.a. experience in Montreal by Miss Janet Woodley.

The largest concentration of i.t.a. in Canada (as of the beginning of the 1967-68 school year) was in Vancouver, British Columbia. The paper by Mr. C. H. Shoemaker presents the general results of a first-grade study conducted there. Although no statistical computations are presented, Mr. Shoemaker notes that all experimental classes scored higher on the Stanford Achievement Test than the control group classes. He also presents an interesting set of results from an attitude questionnaire submitted to principals and teachers involved in the study.

### 1. I.T.A. IN THE VANCOUVER SCHOOLS

C. H. Shoemaker
Vancouver School Board
Vancouver, Canada.

Mr. Chairman and delegates:

It is my purpose this afternoon to report on the role of i.t.a. in the Vancouver Schools and what we think about it.

Vancouver operates 65 elementary schools, enrolling Kindergarten to Grade Seven, with a total of about 47,000 pupils. During this past school year, there were 6,600 pupils who commenced the reading program in Grade One.

To give you a little background of how we embarked on our i.t.a. program: In 1964, Vancouver School Board officials began accumulating information about i.t.a., our sources including reports from London, England and from Bethlehem, Pennsylvania. In the summer of 1964, we previewed the film "The Forty Sounds of English", and in November of that year two of our directors of elementary instruction attended in Salem, Oregon a workshop conducted by Dr. Mazurkiewicz. In December the B. C. Educational Research Council brought Mr. John Downing to its annual meeting and made arrangements for him to address a public meeting at one of our secondary schools.

During the spring of 1965 preparations were made for the introduction of i.t.a. in six Vancouver elementary schools. In June a workshop was held for prospective i.t.a. teachers; these sessions were conducted by Miss Margaret Rose and Mr. Michael Pitman of the Initial Teaching Publishing Company.

In the 1965-66 school year i.t.a. was tried out in Vancouver in five Grade One classes and one junior special class -- "special class" is our term for a slow-learner class. The i.t.a. classes were selected so as to be representative in general of Vancouver elementary schools, and the pupils in the i.t.a. class representative of the Grade One population in the school -- but no attempt was made to set up controls. Pupils were placed in i.t.a. classes only with the consent of their parents.

The American series *Early To Read - i/t/a/ Program* was adopted for use with the Downing Readers and other titles to be used as supplementary books. No tests were administered and the 1965-66 program was not considered a controlled experiment. During the school year the six i.t.a. teachers met periodically with a director of elementary instruction and the primary supervisor to discuss procedures, problems, and general progress.

Principals and teachers of classes learning by i.t.a. reported that:

- --Pupils on the i.t.a. program appeared to be making slow progress during the early part of the term, but once the phonemes were learned, progress became very rapid.
- --Children gained greater confidence in their ability to read.
- --The consistency of i.t.a. made it easier for pupils to use this medium in beginning to read.
- --There appeared to be a natural stimulation in children's writing.
- --Pupils enjoyed writing stories. Teachers reported that it was a new experience for them to have children voluntarily writing stories at home and bringing them to school.
- --The children appeared to be happy working with i.t.a. and had little difficulty in switching to T.O.
- --Once the children had learned the sounds, they seemed to have little difficulty in handling advanced reading material.
- --At the time of transfer to T.O. the demand for library books was heavy, and books selected were at an advanced literary level.
- --There appeared to be an improvement in the speech habits of pupils using i.t.a.

The teacher of the junior special (slow-learner) class where i.t.a. was used expressed delight with the progress of her pupils, their willingness to express themselves both orally and in writing and their confidence in their ability to learn to read.

As a result of the experience with i.t.a. during 1965-66 it was decided to expand the program in the ensuing school year, and in June, 1966, a workshop was conducted to acquaint more teachers with i.t.a. procedures and materials. During 1966-67 i.t.a. was used in 20 Grade 1 classes, one junior special class, and one Grade 2 class. In the Grade 2 class the transfer to T.O. was delayed because of the non-English background of pupils.

During the school year a questionnaire was sent out to principals and teachers using i.t.a. The following is a summary of responses to this questionnaire:

1. HOW MANY PUPILS ARE THERE IN YOUR CLASSES?

    Grade 1 classes ranged in size from 25 to a maximum of 34. The typical class had 29 pupils.

2. HOW MANY HAVE MADE THE TRANSITION TO T.O.?

    46 pupils out of a total of 550 -- eight percent -- had made the transition to T.O. by March 15.

3. HOW MANY PUPILS ARE WORKING IN EACH OF THE FOLLOWING (*Early to Read*) BOOKS:

| | |
|---|---|
| Book I | 0 |
| Book II | 0 |
| Book III | 30 ( 5.5%) |
| Book IV | 87 (15.8%) |
| Book V | 165 (30.0%) |
| Book VI | 233 (42.4%) |
| Book VII | 33 ( 6.0%) |

    The typical pupil was completing Book V by March 15. Two others (0.4%) were reading exclusively in the Downing Readers.

4. CAN YOU ESTIMATE THE NUMBER OF LIBRARY BOOKS READ TO DATE THIS YEAR (BOTH IN i.t.a. AND IN T.O.)?

    The numbers ranged from 0 to 100. One teacher commented: "*All* of the library books have been read."

5. PLEASE NOTE ANY EFFECTS THAT THE USE OF i.t.a. APPEARS TO HAVE ON ACHIEVEMENT IN READING.

    These were some comments:

    "...more independence in reading."

    "Children are interested in reading earlier and they attain a higher reading level."

    "Many understand stories and concepts that formerly were introduced at Grade III level."

    One principal commented: "...approximately six months above normal achievement in reading."

    "The almost perfect consistency between a sound and its phoneme develops confidence in reading and a rapid development of word attack skills."

6. PLEASE NOTE ANY EFFECTS THAT THE USE OF i.t.a. APPEARS TO HAVE IN OTHER SUBJECT AREAS.

Oral Expression:
"Improvement"
"Improved diction"
"More mature"
"More interesting"
"No noticeable difference"

Written Expression:
"Much freer"
"Pupils are more willing to write about their own ideas"
"More creative"
"Uninhibited"
"Children write copiously and enjoy doing so"

Free Reading:
"Considerably more extensive"
"More enjoyable"
"Children are enthusiastic"

Speech:
"Reduces minor speech problems"
"Speech generally improved"
"Stories broaden vocabulary"
"Irregularities in speech are easily detected in writing"

Printing:
"The same"
"Perhaps slightly more untidy"
"Not too neat"
"Satisfactory"
"Poor"

Other Areas:
"Very few discipline problems"
"Good habits and attitudes are carried over to other subject areas"
"Pupils have confidence and seem unafraid of new ideas"

7. IN YOUR OPINION, HAS i.t.a. BEEN ANY MORE SUCCESSFUL WITH ONE TYPE OF PUPIL THAN ANOTHER: VIZ., BRIGHT, SLOW, OR AVERAGE?

This question produced a wide divergence of opinion. Six of the primary teachers said that i.t.a. was equally successful with all types; five said it was most successful with bright pupils; three said it was most successful with average pupils; another three said it was most successful with slow pupils. One teacher commented: "i.t.a. has not performed any miracle with slow pupils; they read less well but they are better in phonics."

8. PLEASE NOTE ANY DIFFICULTIES YOUR PUPILS APPEAR TO BE HAVING IN MAKING THE TRANSITION TO T.O.

"Negligible"

"No difficulty at all if they are allowed to transfer when they are ready"

9. WHAT DISADVANTAGES DO YOU SEE IN USING i.t.a.?

--Printing may be somewhat less tidy

-The cost of i.t.a. materials

--Difficulty in locating suitable teachers and training them

--The difficulty the teacher of a Grade 2 class may have with pupils who have not completed the transition satisfactorily

--Difficulties in placing transferees

--Difficulty that a slow pupil may have in making the transition

--Organizational difficulties if there is only one class in Grade 1 using i.t.a.

--i.t.a. classes noisier than T.O. classes

--Parents cannot help the youngster with reading in i.t.a. at home

--Lack of sufficient reading material in i.t.a., both in the school library and at home

--A few teachers suggested that some of the i.t.a. symbols could be improved

--One or two suggested that transition should be left to Grade 2

--One principal felt that i.t.a. may have an adverse effect on spelling

--Many of the respondents suggested that there were *no* major problems

10. PLEASE NOTE ANY EMOTIONAL REACTIONS OF YOUR PUPILS TO THE USE OF i.t.a.

The responses here were positive and favourable.

"All of the children felt a great sense of achievement after learning the alphabet and discovering how easy it is to read in i.t.a."

"...extreme pleasure at being able to read so soon after starting Grade 1"

"Frustrations in learning to read were reduced"

"Reading was easier, pressure was less"

"Fewer frustration, happier children"

11. PLEASE LIST ANY EFFECTS OF i.t.a. ON PERSONALITY TRAITS THAT YOU HAVE NOTED

"More confidence"

"Children are more self-reliant and independent"

"i.t.a. worked well with non-English-speaking children"

12. IN GENERAL, WHAT IS YOUR REACTION TO THE USE OF i.t.a. IN YOUR CLASS? WOULD YOU CHOOSE TO CONTINUE TO TEACH WITH i.t.a.?

Without exception, the reaction of teachers was favourable to the use of i.t.a. in their classes and teachers would continue to teach with i.t.a. The consistency and reliability of the sound-symbol relationship has developed a confidence in word building and word attack. These skills developed early, more easily, and more rapidly.

13. IN GENERAL, WHAT HAS BEEN THE REACTION OF PARENTS?

"Favourable"

"Interested"

"Co-operative"

"Astonished"

"Pleased"

One respondent indicated that parents were "unsure and apprehensive at first, but not at all later on"

14. DID YOU FIND THAT THE USE OF i.t.a. REQUIRED A CHANGE IN YOUR METHODS OF TEACHING READING? EXPLAIN

"...more blending -- fewer sight words"

"I don't think the building up of a sight vocabulary is as important as concentrating on the blending of 44 basic sounds"

"...teach mostly by blending"

"...more work on the blackboard"

"...more word building, then we build sentences"

"I use the same methods as formerly"

One teacher suggested that *Early To Read* may be difficult for the slowest children

Another suggested that the gap between Book IV and Book V was large. There could be an easier book between the two, to develop fluency

Two teachers commented that the Downing Readers would suit the needs of slow children better than the American readers, and that the children enjoyed the workbooks

One teacher summarized her reactions by saying that "No achievement test can measure the enthusiasm and sheer delight that the children display in their attitude towards reading"

Plans were made for an evaluation of the Grade 1 i.t.a. program in five schools. It was decided to test six experimental i.t.a. classes (two of them in the same school) and five matched control (T.O.) classes. The five schools were selected in such a way as to be generally representative of the city.

A director of elementary instruction was made responsible for the selection of schools and for the determining of control groups, giving consideration to the "teacher variable" and to the general mental ability of the classes. For most of the pupils we had scores on the Metropolitan Readiness Test that had been given in May of the kindergarten year. Early in the term the Otis Quick-Scoring Mental Ability Test, Alpha Short Form As, was administered to all experimental and control classes. These ability tests were given to assess the equivalence of groups and, if necessary, to facilitate control of this variable by a covariance technique.

Last March the Primary I Battery of the Stanford Achievement Test, Form W, was administered to all experimental and control classes. For control classes the traditional alphabet was used and for experimental classes the test was printed in i.t.a. Regarding this factor, a pertinent comment was made by Dr. Norman Ellis, assistant director in charge of research and standards for the Vancouver School Board: "Because of the transliteration, the (i.t.a.) test is in fact different from the T.O. test. The level of difficulty for each word is likely to be somewhat different in T.O. from what it would be in i.t.a."

It also should be pointed out that our officials chose to wait until mid-March to administer these tests so that all pupils would have a minimum level of reading ability.

Following are the results -- the mean grade-equivalent scores -- of the Stanford Primary I Battery administered in the five schools:

| | | WORD READING | PARA-MEANING | VOCAB. | SPELLING | WORK STUDY SKILLS |
|---|---|---|---|---|---|---|
| SCHOOL A | | | | | | |
| Experimental (i.t.a.) | (n= 23) | 2.63 | 2.50 | 2.50 | 3.22 | 3.66 |
| Control (T.O.) | (n= 32) | 1.32 | 1.48 | 1.73 | 1.53 | 1.70 |
| SCHOOL B | | | | | | |
| Experimental (i.t.a.) | (n= 30) | 2.89 | 2.49 | 2.24 | 3.11 | 4.66 |
| Experimental (i.t.a.) | (n= 30) | 2.44 | 2.01 | 1.77 | 2.49 | 3.02 |
| Control (T.O.) | (n= 31) | 1.39 | 1.21 | 1.63 | 1.67 | 1.53 |
| SCHOOL C | | | | | | |
| Experimental (i.t.a.) | (n= 26) | 2.57 | 1.97 | 1.88 | 2.58 | 3.73 |
| Control (T.O.) | (n= 28) | 1.68 | 1.60 | 1.66 | 1.97 | 1.97 |
| SCHOOL D | | | | | | |
| Experimental (i.t.a.) | (n= 34) | 3.07 | 2.75 | 3.21 | 3.19 | 4.25 |
| Control (T.O.) | (n= 33) | 2.23 | 2.17 | 2.47 | 2.56 | 2.52 |
| SCHOOL E | | | | | | |
| Experimental (i.t.a.) | (n= 27) | 1.80 | 1.68 | 1.69 | 2.17 | 2.03 |
| Control (T.O.) | (n= 29 | 1.52 | 1.61 | 1.53 | 1.83 | 1.62 |
| TOTALS | | | | | | |
| Experimental (i.t.a.) | (n=170) | 2.59 | 2.25 | 2.25 | 2.80 | 3.59 |
| Control (T.O.) | (n=153) | 1.63 | 1.62 | 1.82 | 1.92 | 1.88 |

It should be noted that on all five sub-tests and for every school the experimental group surpassed its control.

In June the Peabody Picture Vocabulary Test was administered to both the experimental and the control classes in the five schools, to assess the relative development of the two groups in vocabulary. The results of this testing were not yet available when I left Vancouver.

As a result of the recognition last year that children in i.t.a. classes enjoyed writing stories, our officials have pondered the question of whether the stimulation provided by writing in i.t.a. has any effect on creative thinking ability. They considered the feasibility of administering the Figural Test section of the Torrance Test of Creative Thinking, but had some reservations because of the difficulty in scoring this test. They also considered other tests of creativity, but no decision has been made as to the most appropriate test or even whether such a test will be given.

In Vancouver the expansion of i.t.a. teaching has been a voluntary process. If a principal is interested in trying out i.t.a. in his school and if there is a Grade 1 teacher or teachers interested in teaching by this medium, then it is introduced.

An indication of the current interest in i.t.a. in Vancouver is the fact that 40 Grade 1 classes are scheduled to use it next year. This represents nearly 20 percent of the Grade 1 classes in the city's public schools and is double the number of Grade 1 classes that were using i.t.a. during the past school year.

Even more impressive numerically, perhaps, is the fact that 12 junior special classes are scheduled to use i.t.a. in the coming term; as you will recall, there was just one junior special class using it during the past year. In addition, a minority of Grade 1 children who had not made the transition to T.O. by June will continue with i.t.a. next term until they are ready for their transition.

In Vancouver we are fortunate in having a Board of School Trustees who are constantly interested in new ideas and techniques that may improve the quality of instruction in our schools, and for this we officials are very grateful.

"Early praise often brings great rewards later. Many a spark of creativity has been extinguished by indifference".

As this applies to the boy or girl learning to read and write, so it also applies to the teacher using the unfamiliar i.t.a. for the first time.

Much of the success of the introduction of i.t.a. in our schools can be attributed to the warm interest of my fellow director, Mr. W. H. McLachlan, who met regularly with the i.t.a. teachers for round table exchange of experiences, fellowship, expression of opinion, etc.

With the larger number of teachers involved in the coming year it seems likely that the supervisory staff of the primary department will carry on a similar type of in-service training.

Consideration is being given to the possibility of using i.t.a. in teaching English to our many immigrants, both children and adults.

While Vancouver still classifies the use of i.t.a. as an experiment, there seems little doubt that its apparent success and the interest and enthusiasm that have developed among the teachers who have used it, will lead to its becoming an accepted and established part of our general program of instruction.

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## 2. I.T.A. IN MONTREAL: ACTION RESEARCH

Janet E. Woodley
Dorval Gardens School
Dorval, Canada

The i.t.a. medium for teaching reading was introduced into Dorval Gardens School in September, 1964. We were to be three-track in grade 1, two of which would be i.t.a. and one traditional.

The teachers had been prepared by seeing Sir James Pitman's film, *The Initial Teaching Alphabet* and by being instructed in the symbols by Miss Margaret Rose, Education Consultant, i.t.a. Publishing Company. This course took place in June, and the teachers had the summer months in which to prepare materials, practise writing, and familiarize themselves with the program.

The children from Kindergarten were divided into three groups by the Kindergarten teachers - three groups which had displayed similar levels of ability. Teacher judgment was the basis for selection. In September, the grade 1 children took home a letter inviting the grade 1 parents to see the film on the i.t.a., hear an explanation from me, and discuss the idea. In the same letter those children who had been selected for i.t.a. were told they would be put in the traditional class if the parents so wished, those selected for T.O. were told if they would like to have their child in the i.t.a. class to signify their wishes, and we would do what we could. At the same time, the parents were to let me know if they expected to be moved out of the province or the school area before the school year ended.

The area in which Dorval Gardens School is located is quite mixed from a socio-economic standpoint, but the majority are professional people who own their own homes. Most of these parents were interested in experimentation.

That first year was a very exciting one for us. One teacher of i.t.a. had taught grade 1 for some years; one had taught grades 2, 3 and 4, and was anxious to have a grade 1. The T.O. teacher was a Scottish girl with Infant-school training in Britain, and an excellent teacher.

The i.t.a. teachers found the completely phonic approach rather slow at first, and then became completely fascinated by the way their pupils could attack words.

One of the most fascinating and exciting aspects of the first year with this program was the stories the children began to write, the breadth of their vocabulary, and the fact that the written word "ran on" in the uninhibited way of a Grade 1 pupil *telling* a story. This was a refreshing discovery after the rather stilted sentences we had come to expect as the norm from Grade 1.

The teachers had used grouping in teaching before they tackled the i.t.a. program, but after a very short period of time had elapsed, it was quite apparent that grouping as we had never experienced it before was a must. More than three groups were carried on at all times, and the groups were continually changing and shifting.

During this first year of the experiment, the children went ahead through the readers as rapidly as they could. Their reading was more halting and jerky than that of the traditional class, but we ignored that as not being of any great significance. We were most enthusiastic about the content of the stories in the readers, and the children preferred to read and/or write stories rather than go out for recess. There is no greater satisfaction to a child and no greater motivating force than the experience of success!

In June we tested all the grade 1 children - i.t.a. and T.O. with the Gates Primary reading test and found in general little difference in word knowledge and reading for comprehension, but the i.t.a. children were better at word attack.

On the basis of these tests and the general standing in the class, we streamed these children for grade 2. Grade 2 was to be three-track. No. 1 class had the VG - E readers of i.t.a. and T.O. - approximately one third of the total number. No. 2 class had the middle group of T.O. and the top middle group of i.t.a. pupils who had completed the transition. No. 3 class had all the pupils from the i.t.a. classes who had not made the transition to T.O. or who were in the midst of so doing. These children began in Book 4 (i.t.a.) in September and were gradually taken through the transition, so that all the pupils were reading traditional basic readers by the middle to end of October.

The significant points of this first year's work with i.t.a. are to me -

1. The discovery of the ability of grade 1 children to use an interesting vocabulary in writing.

2. The advanced reading which a grade 1 child can do if allowed to go ahead at his/her own speed.

3. The active participation of all children in the reading program and the resultant lack of behavior problems.

The second year for these grade 1 pupils - i.t.a. - was interesting to watch. They wished to make the transition completely from i.t.a. to T.O., and took great pride in spelling correctly. Except for their formal spelling lessons, they were told to spell the words they wished to use to the best of their ability, with no penalty for incorrect spelling. We found very few remnants of i.t.a. symbols at any level.

These same children have now completed grade 3. Of the 75 we started with in grade 1, three years' ago, 51 are still at Dorval Gardens School in grade 3. The No. 1 class is still intact, but the other two have been mixed or shifted around.

From a Metropolitan Battery of Tests which were given to Grade 3 this May, the levels in reading range from 2.4 to 7.9, with the bulge between 3.0 and 4.4, and the percentage at every level not more than two-tenths in favor of i.t.a. Teachers who follow the progress of their classes are sometimes disappointed to find out that they do not appear to be outstanding, but level off in achievement in grades 3 and 4.

The children in the No. 1 class have had advantages in enrichment, and the standard of work expected from them has been high. The level and depths of their interests are not beyond a grade 3 level, and they find concepts difficult to come to grips with, as do most average grade 3 pupils. The pupils of No. 2 and No. 3 classes have progressed well. One i.t.a. child, young chronologically and immature, will repeat grade 3 as she is reading at only a 3-$^{1}$ level now. One i.t.a. boy - hyper-active and testing low average on the WISC - will also repeat grade 3, as reading level is just 2-$^{2}$ now.

In September 1965, I gave all the children going into grade 1 the Lorge Thorndyke Intelligence test, and the classes were made up heterogeneously on the basis of these results. Grade 1 was two-track, and the class learning to read with i.t.a. progressed well. All made the transition by June of that year.

These two classes, one i.t.a. and one T.O., were streamed in grade 2, resulting in 3 groups in each of the two grade 2's. Of the lower stream, six children will remain in grade 2 next year, as they have just completed the 1-$^2$ level basic reader. One of these six children was in the i.t.a. class.

However, of 13 children promoted to grade 3 who have only completed the 2-$^1$ level basic reader and supplementary readers and who will begin the reading program at a 2-$^2$ level in September, four had been in the i.t.a. class in grade 1, and nine learned to read by the traditional method.

The teachers, the Visiting Teacher, and I feel that the i.t.a. children were pushed through the transition either too rapidly or too soon, and that not enough consolidation of word knowledge and comprehension was done for the middle and low groups of children.

This past year, beginning in September 1966, we have had two i.t.a. and one traditional class - 20 children in each class. They were selected on the basis used *two* years' ago - teacher judgment. The pace this year was slower and the children did not go on to the next book until they were reading the preceding one easily, fluently and comfortably. Also, many supplementary materials for comprehension were used along with much oral review.

Of these sixty, four children - two i.t.a. and two T.O. - will repeat grade 1. Statistically this is 2/40 i.t.a. and 2/20 T.O. Some of the conclusions which have been arrived at are:

1. The most obvious one - that the teacher factor in any program is *the* important one.

2. Flexibility is the key to any good program, and i.t.a. is a flexible program.

3. Testing has to be done when a child finishes a book - testing by oral reading and by being questioned on stories.

4. No matter how individualized the program in a particular class may become, they should still be kept in groups for discussion and study of a story.

5. There is a need for more comprehension-type exercises than the workbooks provide. We adapted materials in thinking skills from the traditional courses - a) developing story sequence, b) picking out main idea of paragraph, c) drawing conclusions.

When children can unlock words there is always a danger that they do not understand the words they are saying and they might become mere word callers.

We should begin early to check on phrasing, and it is helpful to make phrase flash cards dealing with each story.

6. The i.t.a. texts move into depth too quickly for the middle and below-average children. Supplementary materials are needed for slower children - materials at their stage of development.

7. There is a definite danger of rushing through transition phases too quickly for slow children. Even the good pupils need systematic help with this part. Level 2-$^2$ readers in traditional are sometimes too sophisticated for the young or immature six-year-old.

8. After Book IV, slower readers *may* make the transition, but it should be to

something at a 1-$^1$ level. Sometimes these slower readers need to do the Book VII transition workbook at the end of their first year and *again* in September.

9. After Book V, the slow group can go into a 1-$^2$ level T.O. reader. They need to read a great deal at this level for content.

If compared with a one basal reader approach i.t.a. would appear to be superior for a greater number of children. If compared with an eclectic approach - a basal reader with additional phonetic methods and skill developing materials - the differences in achievement are not quite as great.

I am very pleased to be participating in this experiment and am convinced that this is an excellent way for a child to learn to read. The fact that reading and writing skills are carried on at the same time enables the children to express themselves freely. The security of knowing that each symbol stands for *one* sound and one sound *only* must be to the advantage of the child. To me this out-weighs learning forty-four symbols instead of twenty-six.

## PART III - SPECIAL GROUPS

Since i.t.a. is an alphabet which may be used to convey a message to any audience, it is not surprising that educators have become increasingly interested in its potential in working with groups presenting special educational problems. A theme which appears to run throughout the papers in this section involves the possibility that special methods or materials may be needed to supplement those already available. It is rewarding to the Editor that there is as much subjective and objective evidence of success with i.t.a. as there has been in these special education problem areas when one considers that there has been so little formal attention given to the special materials or methods for these special groups.

For the most part, the research in these areas has been conducted using relatively small and unique groups of subjects. Perhaps, this is inevitable based on the nature of the groups themselves. Certainly, we have much to learn about i.t.a. in general and in these areas in particular. It appears to many educators that it is especially with groups which present unique learning problems that i.t.a. may be of greatest value. Further, there seem to be additional compelling reasons for using i.t.a. with these groups. In some cases, the additional discriminative cues provided by the characters and the simple correspondence of visual and auditory inputs seem to be ideally suited to the learner. In some cases, the fact that there is simply a *difference* in appearance in characters may give the learner a "scapegoat" in the sense that he is starting from a completely fresh point of view. There are many who have been critical of i.t.a. who are willing to acknowledge that, in those groups where we have already failed with the traditional orthography, we must find another approach. i.t.a. may be that approach. One indication of the increasing interest in i.t.a. in these areas is the fact that, in the proceedings of the Second International i.t.a. Conference held at Lehigh University in 1965, approximately 25% of the papers dealt with these special educational problems. In these proceedings, approximately 40% of the papers reflect these considerations.

### A. THE DISADVANTAGED CHILD

With the War on Poverty in the United States, there has been an increasing awareness of the problems of the culturally deprived child. Psychologists and educators alike have been concerned with providing the child from a poverty background with as much intellectual and psychological stimulation as possible in the belief that this contributes to healthy intellectual and emotional development. Many investigators have seen i.t.a. as a medium through which such a child can learn to read with a minimum of frustration and a consequent maximum development of positive learning attitudes and techniques. The three papers in this section represent research in varying stages of completion. Miss Helen Myers describes how a particular program with disadvantaged children began.

In the paper by Mr. Ivan Rose, he presents preliminary results of a study with such a group of children. He emphasizes that i.t.a. is a *medium* not a method and can be used effectively *only* when a child is ready. He emphasizes the importance of *prereading* development before successful reading can take place. He discusses i.t.a. as part of an overall language and conceptual development program and presents a number of suggestions for dealing with problems in this area. Dr. Lloyd Dunn's paper reports three years of research with i.t.a. in conjunction with the Peabody Language Development Kit. He and his colleagues have found success using the two together to a greater degree than using either one alone.

The interested reader may wish to pursue these issues further with the bibliography listed below.

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## 1. A 1966-67 PILOT PROGRAM IN I.T.A. FOR FIRST GRADE DISADVANTAGED CHILDREN

Helen G. Myers
Long Beach Unified School District
Long Beach, California

Just as in many school districts, those given the responsibility of educating the young citizens of the community, in this instance Long Beach, California, have been deeply concerned that far too many children learn to read poorly or not at all. For many years this concern has been evidenced by consistent efforts to study and to try new procedures, materials, and organizational plans, and to assist teachers in the selection and preparation of curriculum guides. Some examples of these efforts are:

1. Provision of well stocked libraries and trained librarians for each elementary school.

2. Annual purchase of a wide variety of attractive supplementary reading materials selected by teacher committees and circulated from a central book depository.

3. Provision of a well equipped curriculum workshop center with an experienced staff where teachers may get help in planning and making charts, games, and other reading materials.

4. A junior first grade organizational plan for the most immature children. (Discontinued)

5. Split-day scheduling as an optional choice when the nature of a class requires more time for reading than the normal schedule allows and/or when more individualized instruction is desired.

6. A very rich activity program in kindergarten designed to develop oral

language skills and provide the experiential background needed for beginning reading.

7. Encouragement and expansion of the use of selective or individualized reading at all grade levels.

8. Provision of summer reading improvement schools which use multipurpose individualized reading exclusively.

9. Introduction of summer remedial reading classes, utilizing graduate students (experienced teachers) at California State College, Long Beach, as reading diagnosticians and clinicians.

10. Trial and subsequent adoption of the Van Allen Language Experience approach to reading[1] as a part of the kindergarten curriculum.

In spite of these measures and many others, large numbers of children continued to have great difficulty in the initial stages of reading, many failed to progress at a rate commensurate with the ability they seemed to have, and still more read with reluctance and lack of enjoyment.

The search for better ways went on and an interest in i.t.a. was initiated by John Downing's report, *Experiments with an Augmented Alphabet for Beginning Readers in British Schools*[2], which was read by a member of the supervisory staff in 1963. During that year and the two that followed the bombardment of articles in popular magazines as well as in professional journals[3] was read and discussed by members of the elementary staff. Letters of inquiry were written to the Educational Research Council of Greater Cleveland and to Bethlehem, Pennsylvania, where work with i.t.a. was already in progress. By fall of 1964, it was agreed that it would take seeing to believe it. Meanwhile, it was learned that the adjoining community of Bellflower had two first grade teachers trying it.

On November 5 the four Long Beach elementary supervisors went to see, to listen, to ask questions, and to learn. In the spring and the following fall there were return visits, each time to learn more and to observe the progress children were making. It looked too good to be true, and there was some conjecture as to how much credit should go to excellent teaching and how much to i.t.a.

And then good fortune, in the form of the Elementary and Secondary Education Act, smiled upon Long Beach and her large numbers of economically deprived children. Lack of available funds to finance a pilot program in i.t.a. need no longer be an obstacle if a project could be presented and approved, first by the district ESEA committee and second by the State. One elementary supervisor was appointed to the local committee and presented a tentative proposal which was approved in early spring of 1966. The proposal for the trial program was then written and submitted to the State by the Supervisor of ESEA Programs and the Project Director, along with a number of other proposals designed to improve educational opportunities for the children of poverty from kindergarten through high school.

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[1] Roach Van Allen, *Language Experiences in Reading, Teacher's Resource Book*, Encyclopaedia Britannica Press, 1966.

[2] Report of the Twenty-seventh Educational Conference, New York, 1962, *Frontiers of Education*, Educational Records Bureau, 99-157.

[3] List at end of paper.

Chief considerations in the proposal for an i.t.a. pilot program were as follows:

> Proposal for Trial Program, i.t.a.: Preparation during Summer, 1966
> (Grade One, Initial Teaching Alphabet) Title I, ESEA, Project V
>
> 1. Twelve first grade classes, two in each of six ESEA schools, involving approximately 400 children and twelve teachers
>
> 2. Estimated needs requiring funds:
>
> Books and other reading materials
> *Supplies (tagboard, felt pens, small flannel boards, etc.)
> Preparation of teachers
>   Consultant services (summer workshop)
>   Workshop teacher (2 half days, summer)
>   Salary, 12 teachers (7 half days, summer)
>   Consultant services (during school year)
>   *Inservice: Out-of-district visitation (1 day, 12 substitutes)
>   *Professional literature, film rental, etc.

The answer came from Sacramento in June. The proposal, with minor cuts, was approved, leaving a generously adequate budget to supply materials for twelve classes, finance a summer workshop for the volunteer teachers, and provide consultant services during the school year.

Then came the multi-faceted job of preparation, all of which had to be done during the month of July:

1. Putting out a request for volunteer schools and teachers in the target area where the disadvantaged children were enrolled in largest numbers. Also requesting volunteers from teachers outside the target area.

2. Ordering reading materials for the skills program (complete sets of *Early-To-Read* for each class), sets of supplementary readers (approximately 250 books per class), and miscellaneous instructional aids and equipment.

3. Planning a summer workshop to prepare teachers as well as selecting a paid consultant.

By July nine teachers had volunteered, seven of them located in the target area schools and two who wished to move from more privileged areas in order to try i.t.a. with children, who even more than others, needed a special boost in beginning reading. Four of the six target area principals agreed to participate. Nine first grade i.t.a. classes were to open in four schools located in the downtown area of Long Beach in September, 1966.

The workshop for eight, rather than nine teachers (one lost to maternity leave) was held during the last week of August. For five mornings the group met with the consultant from Bellflower, one of the teachers observed the year before. On two afternoons the Curriculum Workshop Center, with a staff member present, was available for the construction of teaching aids. A portion of an article from one issue of the School Bulletin appears below[4]:

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* Not allowed by the State

[4] *School Bulletin*, Office of Superintendent of Schools, Long Beach Unified School District, Long Beach, California, October 7, 1966.

> "Eight Long Beach grade teachers, several supervisors and ESEA vice-principals worked diligently during the last week of August memorizing sounds and learning to write a new alphabet. It was hard work but the hours flew! By the end of the week a well-trained corps of volunteer teachers was skillfully and confidently preparing charts and other instructional aids at the Curriculum Workshop Center in order to effectively launch eight classes of first graders into a new beginning reading program called i.t.a.
>
> "The feelings of the group for their most enthusiastic and competent instructor, Mrs. Louise Hastings, a teacher of i.t.a. in Bellflower, are best expressed by a verse of appreciation the group composed for her:
>
> We looked, we gulped,
> We shivered and shook,
> But thanks to you, it took, it took.
> Hurray, hurray for i.t.a.!
>
> ". . .Careful observation, study, and evaluation of the program will be made throughout the year. It is hoped that knowledge of this unique approach to the complex task of learning to read may provide the new and different instructional skills and materials needed to make reading a successful and happy experience for many children."

Shortly after school opened, parent meetings were held at each of the four schools, the program explained and materials displayed. Attendance at the meetings was not good, but seemed somewhat better than usual. Those who came appeared very interested and asked a number of questions. Copies of *The Story of i.t.a.* were available for distribution. A sample of an invitation that was sent to parents follows:

LONG BEACH UNIFIED SCHOOL DISTRICT
Abraham Lincoln Elementary School
Long Beach, California

October 10, 1966

Mom and Dad,

Please come to our special meeting -- just for you -- on Wednesday, October 12, from 1.30 p.m. to 2.30 p.m.

We want to tell you about our reading and writing and how we learn by i.t.a.

We will see you in Room 18 ________.

************************************************************

________ Fine! I'll be at this important day meeting.

________ I cannot come, but I will contact the teacher for an individual conference.

____________________
Parent

Frequent visits to the eight classrooms revealed interested, enthusiastic teachers and pupils. Children who normally lack built-in motivation for learning in a school setting were busy and happy as they learned one symbol after another.

In November there came an opportunity to visit Sausalito and Stockton where more fine, enthusiastic teachers were using i.t.a. to help children cope with illogical English. In Stockton it was interesting to see second grade underprivileged children preparing for transition and to watch the ease and fluency with which they wrote their thoughts. Discussing the program with supervisors, observing the procedures unique to each district, and hearing the glowing success stories of individual children were tremendously helpful experiences during this first year.

Three afterschool meetings of teachers, principals, and supervisors were held, at which time the Bellflower consultant listened to questions and concerns. Informal discussion followed and new ideas and materials were shared. For the most part, teachers were finding that semi-individualized instruction, i.e., work on skills in very small groups and supplementary reading on a selective-individualized basis seemed most satisfactory. They also found the split-day schedule especially helpful. Half the class arrived at nine o'clock for an hour of reading and was dismissed an hour ahead of the others in the afternoon, while those arriving at ten o'clock remained for their hour of reading. There were times, of course, through the day when the entire class shared experiences with i.t.a.

Shortly after the second semester started two considerations began to loom large, (1) how to cope with the problem of great transiency. In some classes nearly half of the children who started the year in i.t.a. had left and new ones had replaced them. In a few cases teachers with no knowledge of i.t.a. who received children from these classes were disturbed and requested immediate help. Incoming pupils thus far had created no problem, but the i.t.a. teachers anticipated that there might be difficulties later in the year. (2) How to plan for children who were not ready to make the transition to T.O. by the end of first grade. By March each teacher felt fairly confident in predicting that one third to one fourth of her pupils should have the opportunity to continue with i.t.a. in the second grade.

On the positive side of the ledger, the eight teachers without exception noted:

1. A sustained interest was being held by all children in the daily small group skill work.

2. Greater over-all progress was being made from one level of difficulty to the next in the use of the *Early-To-Read* Series in comparison with other classes using traditional reading materials.

3. A keen interest and enjoyment was being observed in the supplementary books. Great pleasure was being shown by children when given the privilege of taking books home. (Very few were lost but many returned damaged and soiled).

4. One by one, children were beginning to write freely and easily, first with encouragement and guidance of the teacher following a field trip or other individual and group experience, later quite spontaneously with the individual motivation coming from within. This had never before happened in a target school first grade!

It was then decided by the supervisory staff, the Director of Curriculum Development, and the Assistant Superintendent of Instruction, that a spring curriculum workshop involving two i.t.a. teachers and the supervisor in charge should develop bulletins providing additional guidelines for teachers in the program and background information for local teachers receiving i.t.a. children by transfer. The titles and contents of the two bulletins that emerged from this workshop are listed below.

*Help For i.t.a. Teachers*

Introduction
Late Enrollees in i.t.a. Classes
Orientation of Parents
*Early-To-Read i/t/a/ Series* Equated to the Two State Basic Series
Recommended Use of Supplemental Library Books
i.t.a. Information Sheet for Pupils Transferring to a Non-i.t.a. Class
Recommendations Related to the Split-Day Schedule and Selective Reading

*Bulletin for Teachers Receiving i.t.a. Pupils by Transfer*

Background Information
Answers to Questions About i.t.a.
The Initial Teaching Alphabet
*Early-To-Read i/t/a/ Series* Equated to the Two State Basic Course
i.t.a. Information Sheet for Pupils Transferring to a Non-i.t.a. Class
Suggested Seatwork to Aid in Transition from i.t.a. to T.O.
Writing in i.t.a.

It was also decided that plans should be made to use i.t.a. in one second grade of each of the four target schools and to continue with two first grades in each school. The four extra sets of i.t.a. materials which had been in storage were all that would be needed for replacements and to provide for the new classes.

On April 22 several of the teachers and a supervisor were invited to tell the "Long Beach Story of i.t.a." at the Southern California i.t.a. Reading Conference held at nearby Laguna Beach. Photographs of classroom activities, children's booklets of illustrated stories, and many teacher-prepared charts were displayed. This was also the first opportunity for the teachers to hear Dr. Mazurkiewicz and Dr. Bainbridge as well as to share ideas with teachers from other districts in the area.

With the last month of school came formal testing time. Building counselors administered the Stanford Test (in T.O.) required by the State, and two weeks later the Metropolitan Reading, Primary I, i.t.a. Edition. Even though the Stanford Test in T.O. was frustrating for many children, the results were surprising. In every class the i.t.a. children scored as well or better than the children in T.O. classes. The chart on the following page shows results of the Metropolitan Test in i.t.a.

Evaluative comments that tell the story far better than objective test scores included these:

> "The children who have worked with i.t.a. seem to overcome careless speech habits much more quickly than others."
>
> A speech teacher

> "It is amazing to watch the eagerness with which children in i.t.a. classes come to the library this spring and look at books, many of them reading at second grade level in T.O."
>
> A school librarian

> "I thought at first it was a crazy idea, but I was willing to take your word for it. Now I'm sold! This morning we took our boy to

LONG BEACH UNIFIED SCHOOL DISTRICT
Office of Research (ESEA)

Scores of Pupils from i.t.a. Classes
on the Metropolitan Achievement Test: Reading, Primary I

June, 1967

(Norm = 1.9)

| Schools | | Word Knowledge | | | Word Discrimination | | | Reading | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (Med.) | | | (Med.) | | | (Med.) | |
| | N | $Q_1$ | $Q_2$ | $Q_3$ | $Q_1$ | $Q_2$ | $Q_3$ | $Q_1$ | $Q_2$ | $Q_3$ |
| A | 25 | 1.4 | 1.6 | 1.7 | 1.6 | 1.8 | 2.1 | 1.6 | 1.7 | 1.7 |
| B | 60 | 1.8 | 2.4 | 2.7 | 2.0 | 2.5 | 3.1 | 1.4 | 1.7 | 2.1 |
| C | 43 | 1.7 | 2.1 | 2.7 | 1.8 | 2.4 | 2.8 | 1.3 | 1.6 | 1.9 |
| D | 52 | 1.3 | 1.6 | 1.8 | 1.5 | 2.0 | 2.8 | 1.5 | 1.7 | 2.1 |
| Schools Combined | 180 | 1.5 | 1.8 | 2.5 | 1.5 | 2.3 | 2.8 | 1.5 | 1.7 | 2.0 |

a restaurant for breakfast. We could hardly believe it when he read the menu and ordered the steak and eggs special with hash browned potatoes *all by himself*."

A mother

*"New Alphabet for Beginners: It's a Smashing Success" -- Headline of a fine supportive article in the local newspaper.

"i.t.a. has provided us with a fringe benefit we hadn't expected. Many of our children come to school with adult-size troubles and worries. For most of them, before i.t.a., there was no easy way for them to release the resulting tensions excepting by antisocial behavior. Now, however, they feel able and free to express what is in their hearts by writing. The content of their lives, their hopes, their fears, their likes and dislikes, and their imaginings all come out on paper. We have far more clues to the understanding of each child than we had before i.t.a."

A teacher

A set of colored slides showing i.t.a. classroom activities taken at random during the year supplements and illustrates the story of the 1966-67 pilot program and has been used repeatedly at professional meetings of administrators and as a means of informing parents and the general public.

In addition to the twelve classes supported by ESEA, the district has provided funds for four additional first grade classes located in two schools serving

* *Long Beach Independent Press-Telegram*, Aug. 2 and Aug. 3, 1967, "Pupils' Reading Skills Amaze Teachers," by Les Rodney

a middle socio-economic segment of the district. And so, even though the program is comparatively small in size, it is increasing from eight to sixteen classes in one year. Quoting from the newspaper again, "Does it work? It does. One school year later the verdict on the experiment is indisputable. The Initial Teaching Alphabet (i.t.a.) is an overwhelming success . . . This new tool has fulfilled its aim, success for those who were not succeeding."

As a heart-warming postscript, anecdotes about Vincent, only one of 400, could be sufficient to justify the entire project. Vincent, a small, slender, six-year-old Negro boy with many problems, entered Mrs. O's first grade class in September with an indifference bordering on dislike for everything the school represented to him. Before many weeks had passed Mrs. O. and i.t.a. had taken hold of Vincent and had revealed his keen mind and mature sense of humor. By Christmas he was writing fluently in the dialect and accent of the home. His stories, three of which are included here, were almost unbelievable in their revealing flashes of humor, philosophy, and imagination. In June he announced with grin and shining eyes, "When I grow up I'm gonna be an 'arthur' and write books."

### Vincent's Stories
(Transcribed to T.O.)

> "If I had three wishes I would be the happiest boy in the world. I want to have wings and I want to be magic and be smart and I would be so happy! Why do you want to know, Mrs. O?"
>
> "When Joan my sister first came my mother called my auntie to tend to us. And every day my father go to see her. And when Joan got out she was little and quiet and I touch her and my mother said her name is Joan and I touch her agin and she start crying. She looked like me and whin she came I couldn't git enough of kissing her and she growed fast!"
>
> "At the meetin' they almost stay all night and I almost went to sleep. The preacher preached out loud to me and he made the other people shout and we had a lovely time with the people. When I got outside I was freezin' to death than I ever bin. When the people start shouting I start to shout. When the preacher was preachin' they was talking to God."

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## 2. USE OF THE INITIAL TEACHING ALPHABET -- A PROPOSAL FOR INCREASING ITS EFFECTIVENESS WITH DISADVANTAGED CHILDREN

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and

Jack A. Holmes
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Berkeley, California

Educators for many years have accepted as axiomatic that children from deprived backgrounds generally fail, or, at best, make minimal advances in our educational systems. The burden of this failure must rest not with these children but with the inability of the curriculum to compensate for the children's impoverishment.

Teaching disadvantaged children requires special curriculum. Not only must the content be different but also the material and method must be drastically changed to meet their needs. Passow (1967) states:

> Instructional materials need to be interesting, exciting, and tempting for children from depressed areas.

Within the milieu of the disadvantaged, Mexican-American children present a special learning problem to educators. These children, far from being culturally deprived, have so strong a cultural heritage and tradition that many enter school with Spanish as their first language, often knowing little or no English. This rich culture sometimes acts in conflict with the mainstream of American society.

Since the advent of the Elementary Secondary Education Act (ESEA), many school districts throughout the United States have experimented with new approaches to teaching beginning reading to disadvantaged children. The Initial Teaching Alphabet (i.t.a.) is one of the more successful techniques currently being used with the disadvantaged.

Reports and rumors have been heard recently from various sources in the United States claiming that i.t.a. is losing favor because it has not measured up to educators' expectations. This apparent disenchantment is due primarily to a lack of understanding of the limitations of i.t.a. or, indeed, any reading media when used with specific segments of our population. Therefore, this paper will concern itself with three specific areas. A description and analysis of the Stockton i.t.a. project, the implications for the use of i.t.a. with the disadvantaged, and, finally, a discussion of curriculum appropriate for the development of verbal and cognitive experience.

## Part I

### Description of Project

The Stockton Unified School District has a large percentage of disadvantaged youth, 30% of whom are Mexican-American. Because of this, a Title III ESEA grant was applied for and received. Co-operating in the project were the Tracy Public Schools and the Catholic Diocese of Stockton. The major purposes of the project were:

1. To determine the effectiveness of i.t.a. with the disadvantaged including Mexican-American pupils.

2. To demonstrate the use of i.t.a. to educators from throughout California.

This paper will concern itself with the first major objective. Twenty first grade classes were designated i.t.a. (Initial Teaching Alphabet) experimental research and 20 first grade classes were designated T.O. (traditional orthography) control research. The participating teachers (1) volunteered to take part in the i.t.a. classrooms or (2) stated a strong preference for remaining with T.O. However, the first grade children in each school were randomly assigned from within representative subsamples to either the i.t.a. or T.O. classes. The stratification from which this random assignment was made was calculated by the following formula: A kindergarten teacher rated each child on his reading potential, social maturation, physical condition, and the socio-economic level of his family. These items were then given weights of 5, 3, 2, and 1 respectively. Using the child's weighted totals on these items together with sex and ethnic background, all incoming first graders were arrayed from high to low. From within stratified samples within the array, each member was randomly assigned into the various experimental or control groups.

In order to evaluate the major objective of this project, extensive base line data were collected. These base line data consist of a standardized general ability test, a reading readiness test, and several reading achievement tests. In addition to the test data, an accurate record of the children's progress through the basal reading series was maintained.

### Analysis of Data

What is about to be said must be taken as a preliminary progress report, subject to modification when the final analysis, now being made by Dr. Jack A. Holmes, has been completed. In September all first graders were administered the Lorge Thorndike Intelligence Test and the Lee Clark Reading Readiness Test. In presenting the results of these tests, Figures 1 and 2 show how successfully the formula matched the experimental i.t.a. and T.O. control groups.

Figure 3 shows that at the end of February, 48% of the i.t.a. research students were reading at the Primer level or *above* compared to 35% of the children in the T.O. research classes. The i.t.a. pupils include 42 1/2% who were reading Pre-primer 3 or *below* while 55% of the T.O. pupils were reading at these levels. These reader level differentials *suggest* that children from deprived backgrounds with limited language development are materially aided by an artificial orthography even in the early stages of the first grade.

At the end of January, the Lee Clark Reading Primer Test was administered to all research classes. Table 1 shows that there is little difference between the Lee Clark Primer Test results of the i.t.a. and T.O. research classes. Nevertheless, the statistical data seem to favor the i.t.a. classes at the median and $Q_3$ levels. However, 25% of i.t.a. and T.O. pupils were still reading at or below the 1.4 and 1.5 grade equivalent, respectively, and this suggests the hypothesis that a significant amount of pre-reading development is needed by these kinds of children before effective learning can take place in *either* i.t.a. or T.O.

The end of the year reader placement is depicted in Figure 4. Thirty-seven percent of the i.t.a. pupils were reading above grade level compared to only 7% of the control group. Fourteen percent of the i.t.a. and 19% of the T.O. pupils were reading at pre-primer level or below. These statistics throw into bold relief the necessity of facing up to the possibility that T.O., i.t.a., or other special reading techniques are of little value to children not ready for *any* formal reading program. It is to this hypothesis that Part II of this paper will be directed.

Figure 5 depicts the lingual type and the end of the year reader placement for the special Mexican-American pupils studied by the project. These data indicate that those Mexican-American children capable of learning to read made faster progress in i.t.a. than their T.O. counterparts. Twenty-eight percent of the Mexican-American i.t.a. pupils were above grade level compared to 6% in the T.O. classes. Of the 28% reading above grade level, only 2% were Spanish speaking compared to 20% of whom were English speaking Mexican-American children. From these figures, the following conclusion seems justified: When a lack of language development in English is coupled with a dominant Mexican-American subculture, there is a high probability of reading failure.

Table 2 contains data on the Stanford Achievement Test administered at the end of May. A simple preliminary t-Test performed on the post-test data without regard to corrections based on the pre-test scores indicates that the difference between means for the i.t.a. and T.O. groups is significant at the .01 level. An analysis of covariance will subsequently be performed including appropriate corrections to determine to what degree this difference can be attributed to the contrasting alphabets.

It will also be noted that the variations occur at the $Q_1$ and $Q_3$ comparison points with the greater difference occurring with the more successful students.

The end of the year data on the reader placement and on the Stanford Achievement Test indicate that once disadvantaged children are ready to learn to read, i.t.a. enables them to move at a much more rapid pace than similar children learning to read in T.O. On the other hand, the children who make little reading progress are helped only slightly by the i.t.a. program. These children appear to lack the necessary experiences which enable them to become successful readers in any method! Although i.t.a. is a simplified method for learning to read, it, like T.O., requires a certain minimal readiness level upon which to operate. Therefore, the writers would like to review selected literature which details the deficiencies that exist in many educationally disadvantaged children. These deficiencies should clarify why some children do not make much progress in reading, be it i.t.a. or T.O.

## Part II

### Implications for Using i.t.a. with the Disadvantaged

This study makes it apparent that when children are truly disadvantaged, they are so because they start school retarded in both verbal and cognitive devel-

Figure 1

OGIVES COMPARING i.t.a.-EXPERIMENTAL AND
T.O.-CONTROL GROUPS ON THE LORGE THORNDIKE INTELLIGENCE TEST

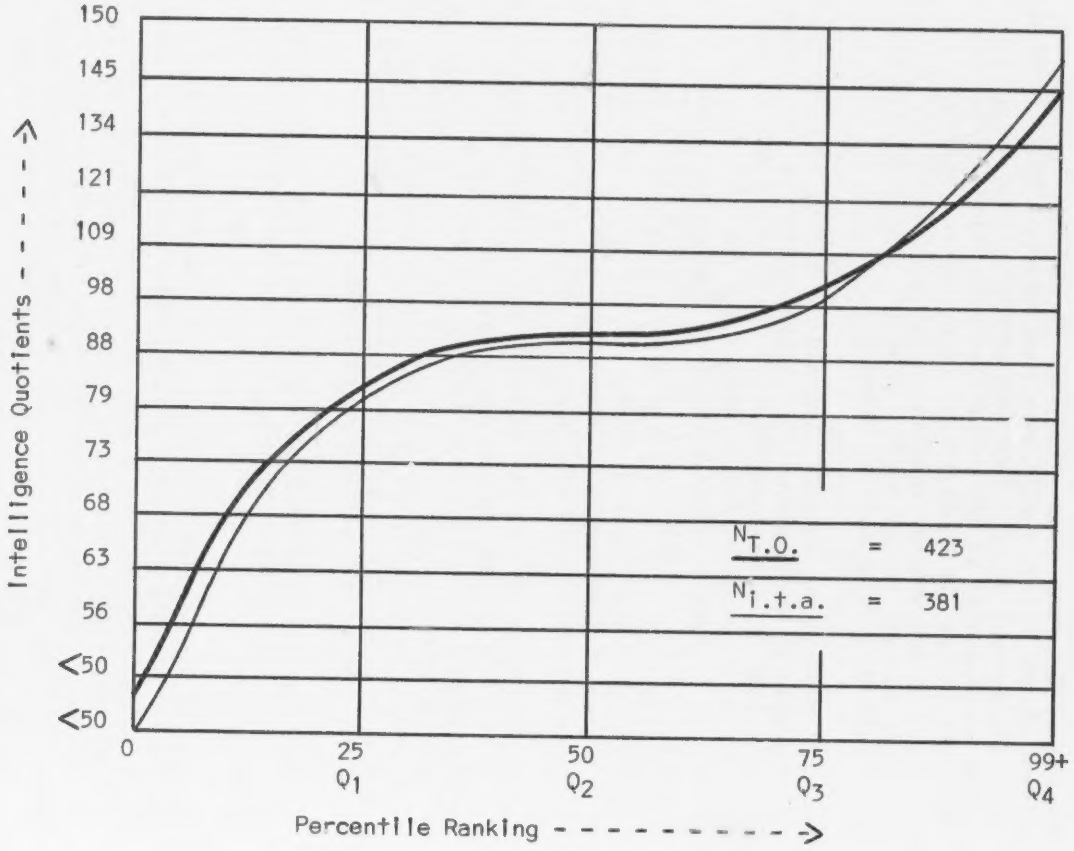


Figure 2

OGIVES OF i.t.a.-EXPERIMENTAL AND
T.O.-CONTROL GROUPS ON THE LEE CLARK READING READINESS TEST

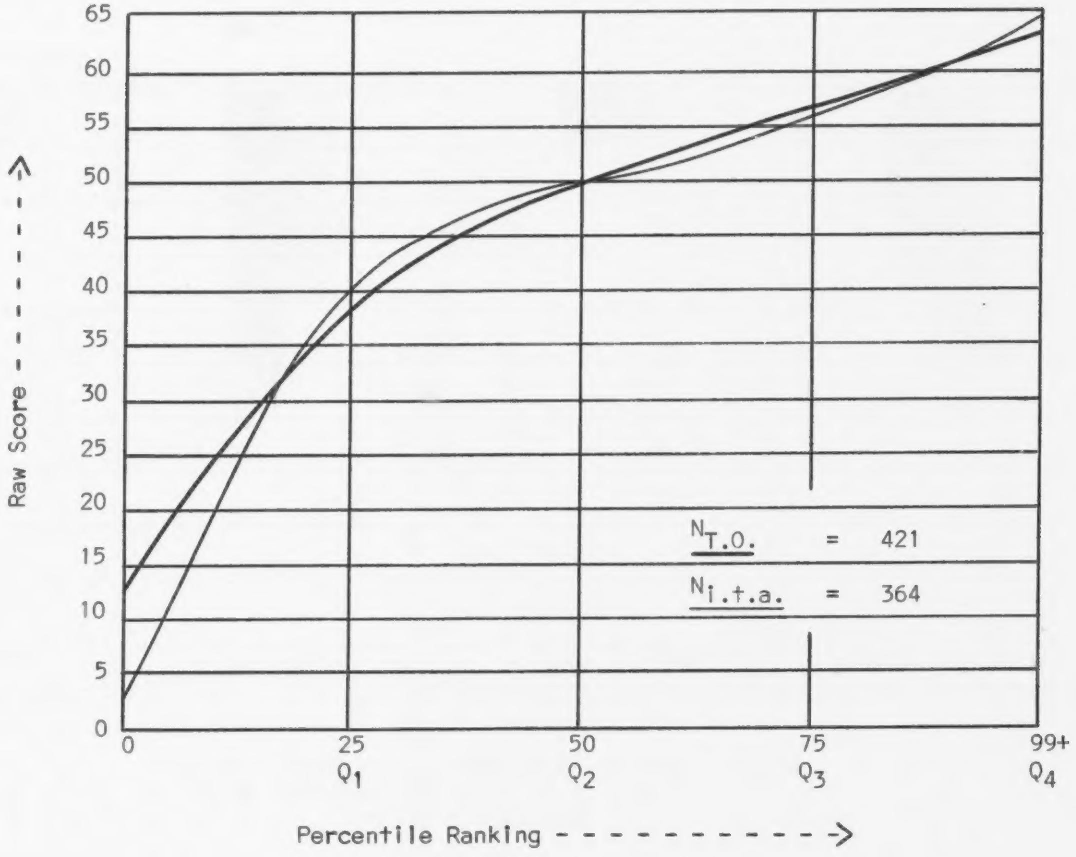
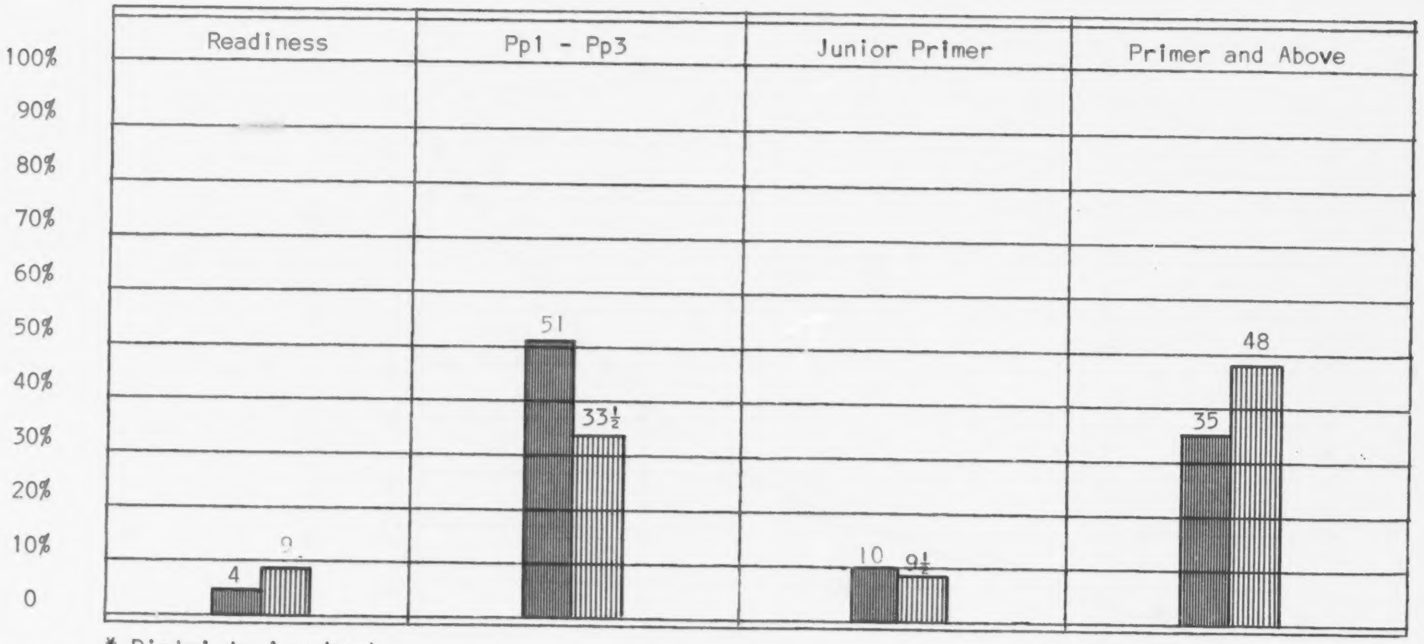


Figure 3

READER PLACEMENT
AS OF FEBRUARY 1967 FOR i.t.a. VERSUS T.O.
RESEARCH CLASSES IN LOWER SOCIO-ECONOMIC AREAS*



* Districts Involved
in project:

Stockton Unified
Tracy Public Schools
Stockton Catholic Diocese

Readers =

T.O.  :  Scott-Foresman
i.t.a.:  Scott-Foresman

N =

T.O.  :  542
i.t.a.:  486

Legend

T.O. ▩
i.t.a. ▥

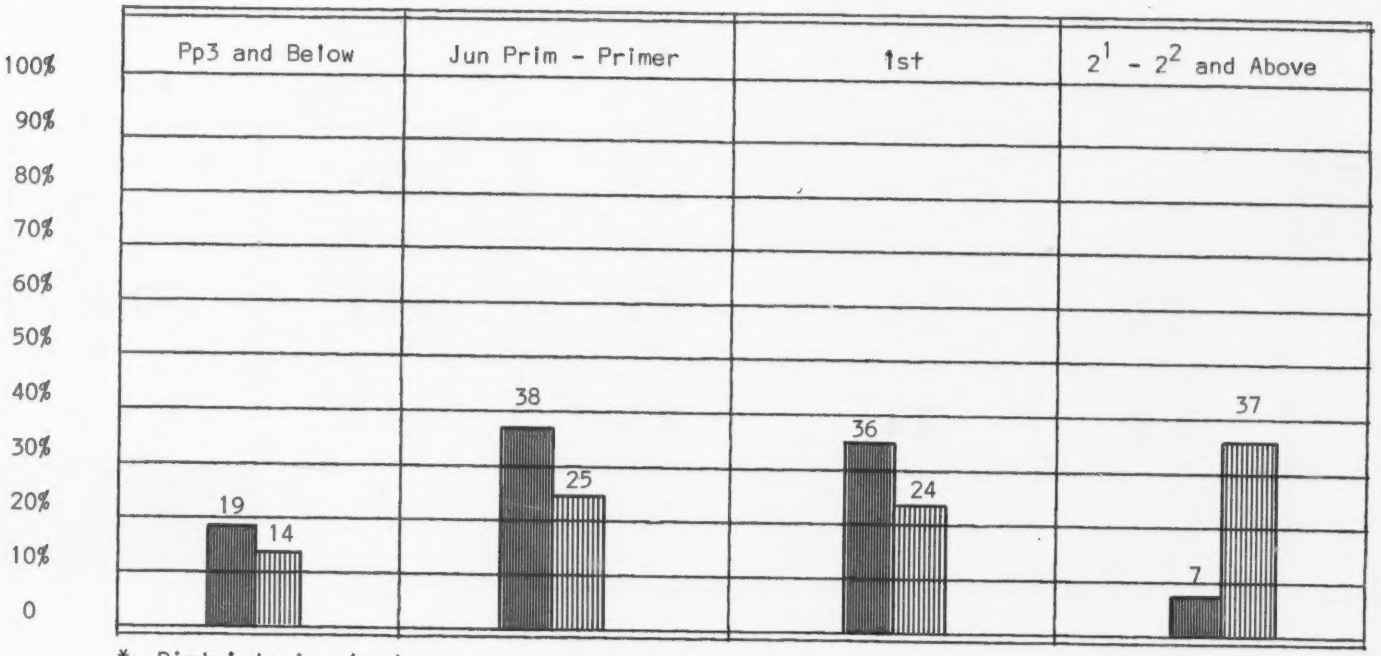
Table 1

GRADE EQUIVALENTS ON THE LEE CLARK PRIMER TEST FOR
i.t.a. VERSUS T.O. RESEARCH CLASSES IN LOWER SOCIO-ECONOMIC AREAS
February 1967

|  | Mean | $Q_1$ | Median | $Q_3$ | Number of Pupils |
|---|---|---|---|---|---|
| i. t. a. | 1.74 | 1.4 | 1.8 | 2.1 | 486 |
| T. O. | 1.66 | 1.5 | 1.7 | 1.9 | 542 |
| Difference | +.08 | -.1 | +.1 | +.2 |  |

Figure 4

READER PLACEMENT
AS OF JUNE 9, 1967, FOR i.t.a. VERSUS T.O.
RESEARCH CLASSES IN LOWER SOCIO-ECONOMIC AREAS*



* Districts involved
in project:

Stockton Unified
Tracy Public Schools
Stockton Catholic Diocese

Readers =

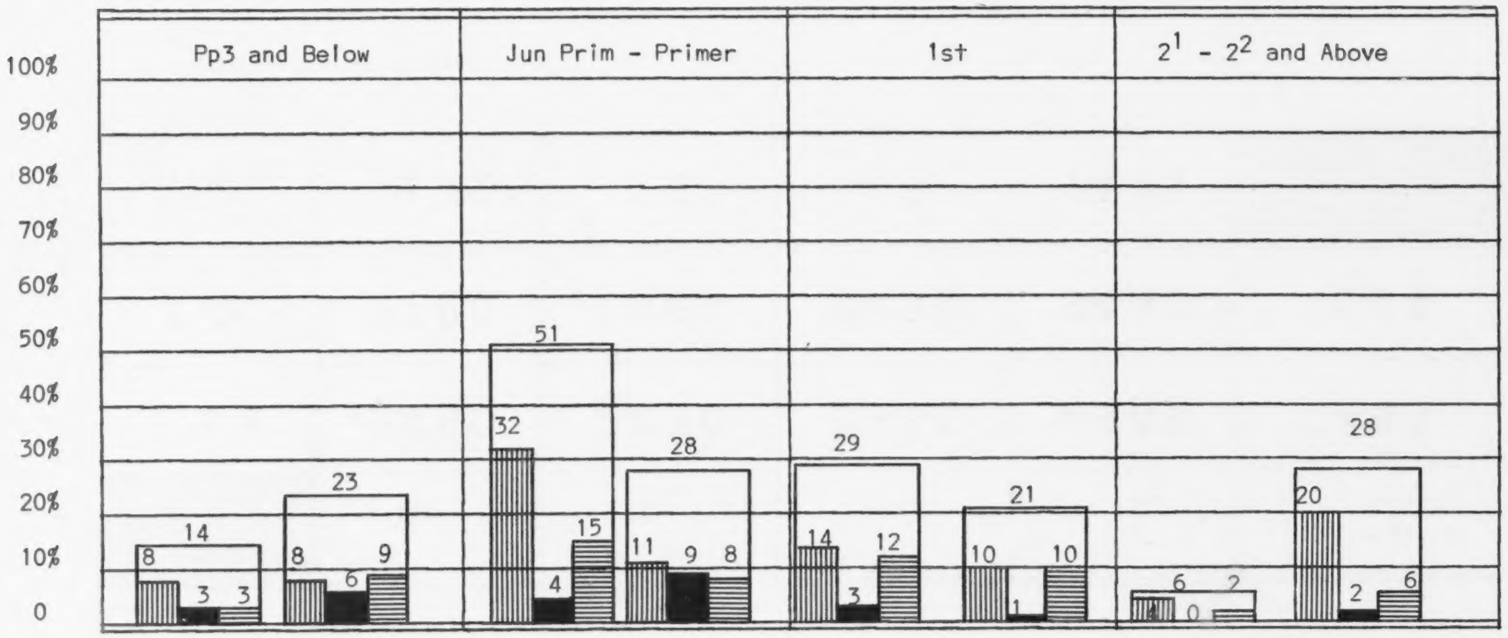
T.O. : Scott-Foresman
i.t.a.: Scott-Foresman

N =

T.O. : 528
i.t.a.: 482

Figure 5

READER PLACEMENT
AS OF JUNE 9, 1967, FOR SUSD MEXICAN-
AMERICAN CHILDREN IN i.t.a. VERSUS T.O. RESEARCH PROJECT



Lingual Type:
E = English only or major language English
S = Spanish only or major language Spanish
B = Equal fluency in Spanish and English

N (T.O.) =
E = 98 ▥
S = 15 ■
B = 51 ▤
All = 164 □

N (i.t.a.) =
E = 63 ▥
S = 19 ■
B = 39 ▤
All = 121 □

Reader:
T.O. : Scott-Foresman
i.t.a.: Scott-Foresman

Table 2

RAW SCORE ON THE STANFORD ACHIEVEMENT TEST FOR
i.t.a. VERSUS T.O. RESEARCH CLASSES IN LOWER SOCIO-ECONOMIC AREAS
June 1967

|  | Mean | $Q_1$ | Median | $Q_3$ | Number of pupils |
|---|---|---|---|---|---|
| i. t. a. | 34.60 | 20.16 | 29.58 | 48.65 | 463 |
| T.O. | 27.88 | 18.65 | 24.95 | 34.50 | 504 |
| Difference | 6.72* | 1.51 | 4.63 | 14.15 |  |

* Significant at 1% level

opments. They need to experience the types of activities that will enable them to cope with the reading process. If the reading program is introduced before the children are ready for the task, failure becomes the expected outcome. Concurrently, emotional problems can be caused by reading failure. DeHirsch (1966) states:

> ...moreover, emotional problems and phobic responses resulting from continued failure may have so complicated the original difficulties that they may no longer be reversible.

Ausubel (1967) suggests that cultural deprivation retards cognitive development. He believes that this retardation might be explained by the critical period hypothesis. If the children are deprived of appropriate stimulation during the critical period, that is, the period at which they are truly capable of utilizing it, permanent retardation may result. Concomitant with the lack of appropriate stimulation is the cumulative nature of intellectual deficit. Ausubel states:

> The child who has an existing deficit in growth incurred from past deprivation is less able to profit developmentally from new and more advanced levels of environmental stimulation. Thus, irrespective of the adequacy of all other factors -- both internal and external -- his deficit tends to increase cumulatively and to lead to permanent retardation.

The often devastating effects of a restricted environment may produce poor perceptual discrimination, inability to use adults as sources of information, limited language development, and a lack of information and concepts. West and Rose (1967) suggest that deprived children may have been short changed in those particular experiences that build the very concepts which prepare him for school. It, therefore, becomes mandatory for the school curriculum to provide appropriate experiences which will, to some extent, overcome early childhood deficiencies.

The New York City Public Schools are currently using material designed to foster intellectual development in young children (1965). These materials are designed to achieve the following major purposes:

1. Point out intellectual skills and concepts which characterize logical concrete thinking.

2. Trace, where possible, the development of these skills and concepts through the stage of pre-logical thinking.

3. Describe various activities which will help foster the child's growth from pre-logical to logical concrete thinking.

Six broad categories of intellectual development are included in the New York material. They are:

1. Basic language skills
2. Concepts of space and time
3. Beginning logical concepts
4. Beginning mathematical concepts
5. Growth of reasoning skills
6. General signs of development

These materials were designed to meet the needs of children who come to school unprepared for the learning situation.

It is suggested that disadvantaged children's cognitive processes are not as fully developed as those of children from verbally enriched environment. Piaget's theory of nominal realism might be applied to many of these children.

The thesis of this paper, then, is that educationally disadvantaged children are not developmentally ready for the reading task. The reasons for lack of readiness are many and are generally compounded by the environment of low socio-economic status. To avoid failure due to this lack of readiness, the developmental level of the disadvantaged must be ascertained. DeHirsch, *et al.* (1966) have been experimenting with tests which seem to indicate whether children are ready for the reading task. The tests are designed to predict with a fair degree of accuracy whether children will succeed or fail the reading program.

If the developmental level is significantly retarded in disadvantaged children, the problem is intensified for boys. There is valid evidence that at the first grade level boys are less mature than girls, thus, placing upon them a decided handicap during the early school years (Vosk, 1964).

Part I demonstrated that some children fail in reading with T.O. or i.t.a. Part II presented a hypothesis that disadvantaged children have been hindered in verbal and cognitive development. Also, the need for identifying the level of readiness of all children has been emphasized. In Part III we will address ourselves to the question: What can the teacher do with these children to get them ready for reading?

## Part III

### Curriculum Appropriate for the Development of Verbal and Cognitive Experiences

The most glaring and serious inadequacies occur in the area of language development. The development of correct speech patterns, therefore, is mandatory. The language of culturally deprived children is more concrete, expressive, and informal than that of middle-class children. It is impoverished mainly in its formal, abstract, and syntactical aspects (Ausubel, 1967).

The teacher of the disadvantaged must place great emphasis on labeling and naming objects. Listening to and telling stories, recalling the order of events, following interesting stories on tape recordings, and role playing all should help the children improve their language ability. Listening skills are developed at the same time that speech is enhanced. The ability to listen is preparation to understanding written communication (Goldberg, 1967).

Both visual and auditory perception need considerable basic activities prior to using the typical readiness program. The area of perception needs to be dealt with in a far more fundamental manner than is suggested in the standard readiness book. Deutsch (1963) states:

> The sparsity of objects and lack of diversity of home artifacts which are available and meaningful to the child, in addition to the unavailability of individualized training, gives the child few opportunities to manipulate and organize the visual properties of his environment and thus perceptually to organize and discriminate the nuances of that environment. These would include figure-ground relationships and the spatial organization of the visual field. The sparsity of manipulable objects probably also

hampers the development of these functions in the tactile area.

Programs that train perception such as the Frostig Material, *The Purdue Perceptual-Motor Survey* (1966) and the *Physiology of Readiness* (1964) all can be adapted to the classroom. Work with templates or material that focuses the children's attention on details should be preparatory experiences for children whose visual discrimination development has been retarded.

Mussen (1965) discusses the use of letter-like forms to determine children's ability to discriminate visually. This type of technique would seem to be of far more value to children than the usual noting of differences in squares, triangles, and boxes. Exercises using letter-like forms, templates, and drawing attention to details would be of value in helping children later recognize words.

Auditory discrimination skills are an integral part of language development. The children exposed to a verbally rich environment before coming to school have a great deal of experience reacting to the kinds of verbal cognitive stimuli which prepares them for the beginning reading task (Holmes, 1965). Children from verbally rich homes have learned to listen, not only to words but to inflection, timing, and oral expression (Flower, 1965). On the other hand, children from impoverished backgrounds lack these experiences of reaction to such stimuli and, therefore, need special training to overcome their deficiencies.

Learning to read by i.t.a. requires many fine auditory discriminations; but before these can be taught, children must at least be able to make gross auditory distinctions. Therefore, gross auditory activities are particularly indicated for the verbally disadvantaged children learning to read by i.t.a. The initial step might be the administration of the Wepman Test of Auditory Discrimination. Failure on this test would seem to indicate that children do not have sufficient auditory discrimination skills to embark on the reading program. When auditory training is needed, it should include discrimination of sounds, intensity of sounds, and perceiving of rhythms. After a firm foundation in auditory training, more emphasis can be given to the sounds of speech.

Deutsch (1963) hypothesizes that children might come to school with perceptual handicaps rather than language deficits. He suggests the remedy might be to emphasize perceptual training and combine it with a gradual introduction of language training. Lower-class families may not have provided children with enough of the experiences which stimulate perceptual training. It is up to the school to start where the home left off.

For children not ready to learn to read, concepts need to be emphasized during the readiness program. Spatial relationships such as: on, longer than, under, and over need clarification. Children must also be capable of understanding time, distance, and sequence. Activities such as retelling a story or putting pictures in order are mandatory for the children unable to understand these abstract concepts.

Growth of reasoning skills and logical concepts need reinforcement. Being able to classify and relate are important tasks.

In essence, the curriculum must start with the children's level of development. To use i.t.a. prematurely, as, indeed, using any system prematurely, can only cause negative results.

## CONCLUSION

Although one must conclude that i.t.a. has been of unquestionable benefit to

Stockton's disadvantaged children, one must also conclude that neither i.t.a. nor any of the reading methods or materials tested are of much value to the children not yet ready to learn to read. From this statement emerges the obvious need for a reformed pre-reading curriculum, a curriculum specifically designed to fill in the gaps in children's development.

The Mexican-American children of low socio-economic status, handicapped by most of the problems associated with the disadvantaged, carry an additional burden when their primary language is Spanish. For these children the change in curriculum might need to go a step further by providing some instruction in Spanish. Spanish instruction may help to ease the transition into English and make it possible for the children to eventually take full advantage of the many benefits of i.t.a.

In conclusion, Goldberg (1967) has this to say about i.t.a.:

> The i.t.a. approach is perhaps the most promising in developing reading skills and creating successful readers in a disadvantaged population and can be tried in schools with a greater sense of security than some of the other plans because it has been and still is being carefully and rigorously evaluated.

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## 3. THE EFFICACY OF THE INITIAL TEACHING ALPHABET AND THE PEABODY LANGUAGE DEVELOPMENT KITS WITH SOUTHERN DISADVANTAGED CHILDREN IN THE PRIMARY GRADES: A FINAL REPORT AFTER THREE YEARS

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The vast majority of boys and girls from our inner city slums encounter inordinate barriers in achieving scholastic success. The problems are particularly acute for such children in the South. These pupils -- especially Negro youth -- bring to the schools a restricted and non-standard form of oral language which is incompatible with existing instructional procedures. Generally, they neither hear nor articulate the ending speech sounds. In addition, many of their teachers have been brought up in this same culture. Thus many of them have similar problems in using the forty odd sounds of Standard English. Therefore, it is not surprising that these children, in contrast with middle class youngsters, have demonstrated progressive retardation in school. To correct this, it seemed to us, improved and more appropriate procedures were needed to teach oral and written language to such pupils. For this reason, we decided to study two new approaches for teaching language development to these Southern children of poverty.

### Purpose

The purpose of this three-year study was to investigate, with under-privileged children in the primary grades, the efficacy of: (1) the Initial Teaching Alphabet (i.t.a.) in teaching beginning reading, and (2) the Peabody Language

* The research reported herein is part of our Cooperative Language Development Project supported by Grant #HD 973 from the National Institute of Child Health and Human Development, and by Ford Foundation funds through the Nashville Education Improvement Project. This experiment was carried out in collaboration with the Nashville Metropolitan Schools. Recognition is due the many teachers and administrators, including Carrie Denney, who participated in this study. Special acknowledgments are due M. D. Neely, Metro supervisor of elementary education, who was the main force in the school system behind the conception and execution of this experiment. Our appreciation is also extended to Mrs. Otie Officer who supervised the ITA teachers and to Mrs. Margaret Pino who supervised the teachers using the Peabody Language Development Kits.

Development Kits (PLDK) in stimulating oral language and verbal intelligence.

It was predicted: (1) that the use of i.t.a. would enhance their reading ability; (2) that the PLDK lessons would raise their intelligence quotients (IQ's) while, at the same time, enhancing their oral language development and school achievement, and (3) that i.t.a. plus PLDK in combination would be even more effective in fostering their verbal intelligence, language development, and school achievement.

## Treatments

Below are described the two curricular adaptations used in the project:

### *Initial Teaching Alphabet*

The experimental reading program used was the *Early-To-Read* Series developed by Mazurkiewicz and Tanyzer (1963). This program consisted of eight text books and five workbooks designed to carry the child from a point of beginning reading in i.t.a. through the transition to traditional orthography (T.O.) at the high third grade level. In contrast to the Downing Reading Series from England which utilizes a sight vocabulary approach, the Mazurkiewicz and Tanyzer program is based on the premise that children should first learn the individual sound symbols, before being taught to synthesize them into words, sentences, paragraphs, and finally stories. Thus a phonetic rather than a sight vocabulary approach was used. This emphasis appeared to hold special promise for Southern youth with their difficulties in enunciating the standard speech sounds of English.

None of the experimental teachers had used i.t.a. before. They participated in a three-day workshop prior to the opening of school, at which time they were encouraged to follow the reading program in a fairly standard manner. All teachers were given instruction in auditory discrimination and sound blending, as well as in the i.t.a. sound-symbol system. They were asked to teach the sounds and their corresponding i.t.a. sound symbols in isolation and in key words before moving into the workbooks and readers.

Some variability occurred in the extent to which the teachers used experience charts, labels for classroom objects, and bulletin boards to create familiarity with the i.t.a. system. A small collection of supplementary reading materials in i.t.a. was also used, including a set of the Downing Readers in each classroom, as well as books in traditional orthography. (The controls used a conventional beginning reading program; in this case, it was the *Reading-For-Meaning* Series, published by Houghton-Mifflin.)

About one-third of the experimental children completed the entire *Early-To-Read* Series before the end of the first school year. These children were moved into the *Basic Reading* Series by McCracken and Wolcott, published by the J.B. Lippincott Company. They began in Book 2-1 which gives a systematic review of the phonetic approach to beginning reading in traditional orthography. Therefore, this basic reader appeared especially appropriate as a follow-up to the *Early-To-Read* Series. A few, who had not gotten through the i.t.a. series by Christmas of the second school year, were shifted over to T.O. regardless of their progress in i.t.a. and placed in the easier first grade work in the *Basic Reading* Series. In the third year, the experimental children continued in this same series.

### *Peabody Language Development Kits*

Experimental editions[1] of Levels #1, #2, and #3 of the PLDK, designed by Dunn and Smith (1965), were used in the study. Level #1 was designed for first grade, level #2 for second grade, and level #3 for third grade disadvantaged children. The lessons were constructed to stimulate oral language and verbal intelligence, and therefore were intended to enhance school progress.

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[1] Revised versions of Levels #1, #2 and #3 of the PLDK are available from American Guidance Series Inc., Publishers' Bldg., Circle Pines, Minnesota, 55014.

Figure 1 outlines a model of the psycholinguistic processes trained by the lessons:

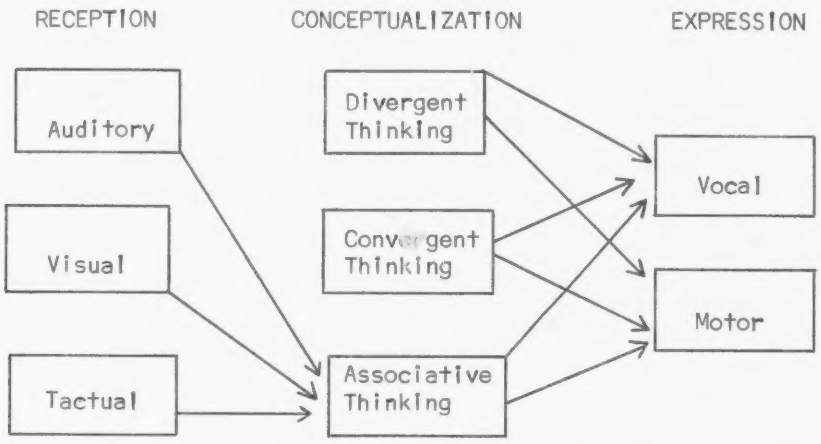

Fig. 1 Model of the Psycholinguistic Processes Trained by the Daily Lessons of the Peabody Language Development Kits

Each of the levels of the kits consists of 180 daily lessons -- one for each day of a school year. The lessons provide 30 to 35 minutes of well-planned oral language stimulation exercises each day. The philosophy of the program is that Language Time should be a half-hour interlude from conventional school work. Though early lessons require considerable teacher participation, the overall goal is to maximize the oral language behavior of the pupils, giving them an opportunity to talk, to think and to learn effectively in a setting that is less structured than during regular periods of school work. The children are never called upon either to read or to write. In fact, no seat work is involved. The total group participates together, the emphasis being on talking and understanding Standard English.

Groups

From 17 classes in nine schools, eight groups were constituted. Figure 2 illustrates pictorially the design.

Group 1 received i.t.a. but no PLDK; group 2 received i.t.a. plus one year of PLDK; group 3 used the conventional reading approach (T.O.) plus PLDK for one year; group 4 received i.t.a. plus two years of PLDK; group 5 used conventional reading plus two years of PLDK; group 6 received i.t.a. plus three years of PLDK; group 7 received conventional reading in T.O. plus three years of PLDK. The eighth group consisted of control subjects taught in a conventional T.O. reading approach with no PLDK.

During the first year, 1964-65, there were four classes in each of the treatments (other than controls): i.t.a. only, i.t.a. plus PLDK, and conventional reading plus PLDK. These were grouped by at least two teachers with a similar treatment in a school, across six schools. The control group was drawn

| | | Oral Language Development | | | |
|---|---|---|---|---|---|
| | | No PLDK (W/0)* | One Year PLDK (W/1)* | Two Years PLDK (W/2)* | Three Years PLDK (W/3)* |
| Reading | i.t.a. | Group 1 (n=43) | Group 2 (n=34) | Group 4 (n=8) | Group 6 (n=15) |
| | T.O. | Controls (n=43) | Group 3 (N=34) | Group 5 (n=8) | Group 7 (n=15) |

* W/0 = No PLDK; W/1 = One Year PLDK; W/2 = Two Years PLDK; W/3 = Three Years PLDK

Fig. 2 Pictorial Description of Treatment Groups in the Co-operative Language Development Project

from five classes in five schools in the same community. All schools, experimental and control, served children residing in slum areas.

For the second year, 1965-66, two of the groups in i.t.a. plus PLDK continued PLDK for the second year (creating group 4), and two of the groups in T.O. plus PLDK continued the second year of PLDK (creating group 5).

For the third year, 1966-67, one of the i.t.a. groups who had received two years of PLDK continued PLDK for the third year (creating group 6), and one of the T.O. groups receiving two years of PLDK continued PLDK for the third year (creating group 7).

Subjects

A total of approximately 1,000 experimental and 150 control subjects were selected initially to participate in the program. During the first year, complete pre- and end-of-year test data were collected on 732 subjects. Administrative considerations dictated that the various experimental treatments be carried out with all children enrolled in the classes involved. As a result, the groups were neither comparable in size nor on such variables as intelligence quotients, mental ages, chronological ages, and language abilities. Therefore, a selected study sample was established by deleting subjects who did not meet criteria set up for disadvantaged children. More specifically, children with IQ's above 110, as well as those from adequate housing and socio-economic status were excluded. Analyses of variance indicated that the resultant groups were comparable at the outset of the experiment in terms of chronological age, intelligence quotient, mental age, and language age. Basic home information suggested that the level of education of the parent, the number of members in the family, and the type of housing were comparable. At the end of the second year of the treatment, there were 384 subjects with complete test data. At the end of the third year, end-of-the-third-year test data were obtained on 401 subjects. Complete test data were available for all four testings on only 341 subjects. For the third year analysis, subjects were randomly selected to create groups of proportional size, with approximately equal numbers of boys and girls. The sample sizes, upon which the data in this report are based, are to be found in Figure 2.

## TABLE I

Summary of Pretest Data on the Selected Samples
Used for the Third Year Analyses

| Treatment Group | N | CA* | | SB-IQ | | PPVT-IQ | | ITPA-LA* | |
|---|---|---|---|---|---|---|---|---|---|
| | | $\bar{X}$ | σ | $\bar{X}$ | σ | $\bar{X}$ | σ | $\bar{X}$ | σ |
| Group 1 (i.t.a.; W/O PLDK) | 43 | 74.52 | 3.92 | 87.14 | 13.57 | 73.19 | 21.98 | 61.40 | 8.70 |
| Group 2 (i.t.a.; W/1 PLDK) | 34 | 75.91 | 6.67 | 84.62 | 12.98 | 69.00 | 22.13 | 59.74 | 7.16 |
| Group 3 (T.O.; W/1 PLDK) | 34 | 79.47 | 7.06 | 83.79 | 14.65 | 78.59 | 19.02 | 63.47 | 8.92 |
| Group 4 (i.t.a.; W/2 PLDK) | 8 | 74.75 | 3.62 | 85.62 | 10.31 | 78.88 | 11.24 | 59.25 | 5.47 |
| Group 5 (T.O.; W/2 PLDK) | 8 | 84.12 | 4.85 | 84.75 | 10.93 | 78.62 | 25.65 | 72.62 | 16.66 |
| Group 6 (i.t.a.; W/3 PLDK) | 15 | 73.00 | 3.53 | 97.87 | 9.96 | 97.87 | 12.64 | 70.20 | 7.72 |
| Group 7 (T.O.; W/3 PLDK) | 15 | 75.80 | 4.54 | 101.40 | 17.00 | 98.53 | 15.74 | 73.87 | 9.15 |
| Controls (T.O.; W/O PLDK) | 43 | 74.49 | 3.85 | 83.47 | 11.15 | 75.14 | 19.06 | 61.33 | 6.80 |
| Total | 200 | 75.96 | 5.66 | 86.44 | 13.85 | 78.01 | 21.41 | 63.41 | 9.39 |

* Scores reported in months.

### Teachers

Involved in the seven i.t.a. and PLDK treatments were 12 teachers in a total of six schools -- four serving essentially all Negro youth, and two well-integrated with Negro and Caucasian children. Eight of the teachers were Negro and four were Caucasian. Three of the five control schools served solely Negro children and two were integrated. All of the teachers, experimental and control, were primary-grade teachers with more than one year of experience in teaching. Each was fully certified in elementary education, and held one or more degrees. Experimental teachers were asked to stay with the same group of children for the first two years. In fact, the pairs of teachers tended to re-group their children in the second year; one teacher taking the slower half, and the other the more able half. New third grade teachers taught the children in the final year.

The experimental teachers in this study were given a number of incentives not available to the control teachers. They were provided with small supplementary stipends and were asked to attend in-service training sessions throughout the year -- approximating one every two weeks. The experimental teachers were provided other stimulation. Supplementary materials were purchased. They were visited frequently by the researchers, school officials, and other visitors. Too, they were given considerable recognition by their principals. The experimental teachers had an opportunity to observe each other teach and to share ideas. They were visited regularly by a supervisor. Furthermore, they were paired up in schools so as to share informally their innovations and problems. The teachers knew they were being monitored. Thus, *motivation to excellence in teaching was high.* In contrast, the control teachers were not stimulated or supported in any way. Their children were simply tested at the beginning of the experiment and retested at the end of each school year thereafter. Thus, a very important part of the experiment treatment was the added incentives provided the experimental teachers, and not the control teachers.

## Evaluation

Test data were secured in three areas of development: school achievement, language development, and verbal intelligence. The instruments used in the first, second, and third years were essentially the same. The discussion of the instruments here is concerned with the third year of the study.

### School Achievement

The *Metropolitan Achievement Test* (MAT) was used to measure academic achievement. At the end of the third year, the written language portions of the Intermediate Battery were administered. These consisted of: word knowledge, (WK), word discrimination, (WD), reading (comprehension), (R), spelling, (S), and language usage, (LU). The achievement testing took place from late March to mid-May. Actual grade placement at time of testing averaged from 3.75 (mid-April). Achievement tests were administered by project personnel, not the classroom teachers.

### Language Development

The *Illinois Test of Psycholinguistic Abilities* (McCarthy and Kirk, 1963) was used to measure oral language functioning. It was administered by psychologists and psychometric technicians. This test (ITPA) was developed as an individual language test for children between the ages of 2½ and 9 years. It consists of nine subtests which measure two input channels (auditory and visual), two output channels (vocal and motor), and two levels of organization (representational and automatic-sequential). Its major weakness as a post-test after the third year of the experiment was its "lack of top."

The *Peabody Picture Vocabulary Test* (Dunn, 1965) was used as a second measure of oral language. This test (PPVT) is an individually administered, single channel, instrument yielding a measure of hearing vocabulary. The subject is required to indicate which of four response pictures correctly depicts the meaning of a stimulus word presented orally by the examiner. This test was also administered by psychologists and psychometric technicians.

### Intellectual Development

The verbal intelligence of the children was measured by means of the 1960 revision of the *Stanford-Binet* (S-B). This test was also administered by psychologists and psychometric technicians on the project staff.

## Results and Discussion

Results of the investigation are reported for each of the three areas of functioning for which data were collected.

### School Achievement

Grade equivalent scores derived from the MAT at the end of the third year are presented in Table 2. Shown are average scores for the five measures of written language: word knowledge, word discrimination, reading comprehension, spelling, and language usage. Analyses of variance data are presented in Table 3. As can be seen, both main effects were statistically significant well beyond the 0.01 level of confidence.

TABLE 2

Mean Grade Equivalent Scores
for the Written Language Subtests
on the Metropolitan Achievement Test

| | No PLDK | One Year PLDK | Two Years PLDK | Three Years PLDK | Total |
|---|---|---|---|---|---|
| i.t.a. | 3.15 | 2.51 | 3.71 | 4.90 | 3.46 |
| T.O. | 3.15 | 2.84 | 2.73 | 3.76 | 2.99 |
| Total | 3.15 | 2.72 | 3.22 | 4.33 | 3.23 |

At the end of three years, children who acquired initial reading skills utilizing i.t.a. were superior to the T.O. treatment groups. The average written language achievement of the i.t.a. treatment subjects was a 3.461 grade equivalent, whereas the T.O. subjects were achieving, on the average, at the 3.122 grade level. Since the MAT was administered in mid-April, an expectancy for average third grade children would have been the 3.75 grade level. Thus both groups were below the national average, but the i.t.a. group was less so.

At the end of three years, children who were stimulated in oral language by the lessons from the Peabody Language Development Kits were significantly

## TABLE 3

Analysis of Variance on Average Grade Equivalent
Grade Scores for the Written Language Subtests
on the Metropolitan Achievement Test

| Source of Variation | Degree of Freedom | Sum of Squares | Mean Squares | F Ratios |
|---|---|---|---|---|
| A (i.t.a. vs. no i.t.a.) | 1 | 274.4825 | 274.4825 | 9.9448 * |
| B (PLDK) | 3 | 1185.8551 | 395.2850 | 14.3217 * |
| A x B interaction | 3 | 246.7729 | 82.2576 | 2.9803 * |
| Error | 192 | 5299.2915 | 27.6004 | |
| Total | 199 | 7006.4020 | | |

* F.95 = 2.65

superior in school achievement to those who did not receive the PLDK lessons. As seen in Table 2, those receiving three years of PLDK were achieving on the average in written language at the 4.33 grade level, those with two years of PLDK at the 4.03 grade level, those with one year at the 2.717 grade level, and those with no PLDK at the 3.15 grade level. It would appear that the oral language stimulation was effective in stimulating school achievement. Judging from the descriptive statistics, the i.t.a. group with all three years of PLDK were doing especially well, scoring at the 4.90 (almost the fifth) grade level. Here is evidence that taking 30 minutes out of the school day for oral language stimulation does not detract from regular school achievement but enhances it significantly. In fact, on the average, the children with three years of PLDK were almost 1.2 grade equivalents ahead of the non-PLDK children, about a 40 per cent increment.

Language Development

Table 4 presents the gains in language age on the ITPA after three years. Table 5 reports the analysis of variance for these data. One of the main effects was statistically significant, plus the interaction.

Those children receiving PLDK made greater language gains than children not receiving PLDK. Since the children had been in school 3.75 years, one could anticipate a LA gain of 45 months for average children. The gains were not this great. With three years of PLDK the gain was 33.93 months; with two years, 27.56 months; with one year, 25.19 months; and with no PLDK, 25.86 months. Thus, while PLDK did enhance oral language, the children were still operating below normal. In general, three years of PLDK lessons resulted in an eight months increment in language age. However, it must be recalled that the ITPA does not have sufficient ceiling for children completing the third grade. Thus the depressed scores may be largely an artifact of the ITPA test characteristics.

## TABLE 4

### Mean Language Age Gain Scores on the Illinois Test of Psycholinguistic Abilities

| | No PLDK | One Year PLDK | Two Years PLDK | Three Years PLDK | Total |
|---|---|---|---|---|---|
| i.t.a. | 24.95 | 25.50 | 34.62 | 33.80 | 27.24 |
| T.O. | 26.77 | 24.88 | 20.50 | 34.07 | 26.72 |
| Total | 25.86 | 25.19 | 27.56 | 33.93 | 26.98 |

In Table 6 are presented the PPVT IQ gain scores. In Table 7 are the inferential statistics. As will be seen, none of the differences were significant. Clearly, hearing vocabulary was not influenced appreciably by either the i.t.a. or PLDK treatments. In fact there was a tendency for the non-PLDK groups to be superior. Perhaps, under these conditions, the teachers did more of the talking, and the children more of the listening.

## TABLE 5

### Analysis of Variance of Language Age Gain Scores as Measured by the Illinois Test of Psycholinguistic Abilities

| Source of Variation | Degree of Freedom | Sum of Squares | Mean Squares | F Ratios |
|---|---|---|---|---|
| A (i.t.a. vs. no i.t.a.) | 1 | 13.5200 | 13.5200 | .1422 * |
| B (PLDK) | 3 | 1781.2754 | 593.7584 | 6.2491 * |
| A x B Interaction | 3 | 862.3052 | 287.4350 | 3.0251 * |
| Error | 192 | 18242.8194 | 95.0146 | |
| Totals | 199 | 20899.9200 | | |

* F.95 = 2.65

### Intellectual Development

Mean IQ gain scores are reported in Table 8. The analyses of variance for these data are in Table 9. As seen in this latter table, there was a significant main effect for PLDK, and a significant interaction.

Children receiving the PLDK lessons increased significantly in IQ scores over those without these lessons. With three years of PLDK the gain was 8.20 points; with two years, 6.12 points; with one year, 4.33 points; and with none only 1.59. It will be recalled that the children entered the first grade with an average IQ approximating 85 or so (see Table 1). Thus they were not brought up to average -- even with three years of PLDK. However, heartening gains were obtained. Whether these gains will remain over time remains to be demonstrated.

The significant interaction is interesting. Again it appears that i.t.a. and PLDK together are more facilitating than T.O. and PLDK together.

TABLE 6

Mean IQ Gain Scores on
the Peabody Picture Vocabulary Test

| | No PLDK | One Year PLDK | Two Years PLDK | Three Years PLDK | Total |
|---|---|---|---|---|---|
| i.t.a. | 12.79 | 12.00 | 6.12 | 5.67 | 10.92 |
| T.O. | 9.67 | 6.03 | 6.50 | 4.20 | 7.36 |
| Total | 11.23 | 9.01 | 6.31 | 4.93 | 9.14 |

## Some Cautions

These results must be received with reservation. The teachers in the experimental treatments were provided with inducements not available to the controls. Thus the results may be due to Hawthorne Effect. To check on this, we are replicating this investigation in a more elaborate fashion, providing the teachers in the conventional basic reader program with equivalent incentives. The results to date on the *Co-operative Reading Project* are not as favorable to either i.t.a. or PLDK as these present findings have been. We shall have a report ready for distribution on this second study later this year.

## TABLE 7

Analysis of Variance of IQ Gain Scores on the Peabody Picture Vocabulary Test

| Source of Variation | Degree of Freedom | Sum of Squares | Mean Squares | F Ratios |
|---|---|---|---|---|
| A (i.t.a. vs. no i.t.a.) | 1 | 633.6800 | 633.6800 | 2.1132 * |
| B (PLDK) | 3 | 1036.4416 | 345.4805 | 1.1521 * |
| A x B Interaction | 3 | 197.8212 | 65.9404 | 0.2199 * |
| Error | 192 | 52572.137 | 299.845 | |
| Totals | 199 | 59440.08 | | |

* F.95 = 2.65

## TABLE 8

Mean IQ Gain Scores on the Stanford-Binet Intelligence Scale

| | No PLDK | One Year PLDK | Two Years PLDK | Three Years PLDK | Total |
|---|---|---|---|---|---|
| i.t.a. | .30 | 3.68 | 9.75 | 13.67 | 3.95 |
| T.O. | 3.49 | 5.00 | 2.50 | 2.73 | 3.81 |
| Total | 1.59 | 4.33 | 6.12 | 8.20 | 3.88 |

TABLE 9

Analysis of Variance of IQ Gains as Measured
By the Stanford-Binet Intelligence Scale

| Source of Variation | Degree of Freedom | Sum of Squares | Mean Squares | F Ratios |
|---|---|---|---|---|
| A (i.t.a. vs. no i.t.a.) | 1 | .9800 | .9800 | .0107 |
| B (PLDK) | 3 | 1104.5935 | 368.1978 | 4.0463 * |
| A x B interaction | 3 | 1444.5245 | 481.5081 | 5.2915 * |
| Error | 192 | 17471.0220 | 90.9949 | |
| Totals | 199 | 20021.1200 | | |

* F.95 = 2.62

## Summary

The purpose of this three-year study was to investigate, with disadvantaged children in the primary grades, the efficacy of the i.t.a. in teaching beginning reading, and Levels #1, #2, and #3 of the Peabody Language Development Kits in stimulating oral language and verbal intelligence. The study began in the fall of 1964 when the children entered the first grade. This report covers all three years of the investigation.

With 17 classes in nine schools, eight procedures were carried out: group 1 received i.t.a. but no PLDK; group 2 received i.t.a. plus one year of PLDK; group 3 used the conventional reading approach (T.O.) plus PLDK for one year; group 4 received i.t.a. plus two years of PLDK; group 5 received T.O. plus two years of PLDK; group 6 used i.t.a. plus three years of PLDK; group 7 used T.O. plus three years of PLDK. The eighth group consisted of control subjects taught reading with a conventional T.O. basic reader, with no PLDK.

Both the i.t.a. and PLDK, as well as the conventional reading programs, were taught by experienced regular classroom teachers in self-contained rooms. Post-testing for each of the three years was begun in late March and completed in mid-May. The experimental teachers were given pre-service training on their experimental treatment(s), provided a small salary supplement, provided with a supervisor, observed frequently, and had in-service sessions during the year. Thus, motivation to excellence in teaching among the experimental teachers was high. Even though the pretesting and post-testing of the control children alerted their teachers that pupil progress was being monitored, the Hawthorne Effect among the experimental groups must be considered as a possible explanation of the results.

Pupil progress was measured in three areas: school achievement, language development, and intellectual growth. Based on results from the Metropolitan Achievement Test, after three years in school, children utilizing i.t.a. were significantly advanced in written language achievement over those in the conventional T.O. basal reading program. Furthermore, the PLDK lessons enhanced school achievement significantly. On the *Illinois Test of Psycholinguistic Abilities,* the language age gains of the PLDK subjects was significantly greater than for the non-PLDK, with a tendency for i.t.a. and PLDK to be facilitating. As measured by the *Peabody Picture Vocabulary Test,* the group were not statistically different in hearing vocabularies, suggesting that the PLDK lessons have little effect on this aspect of language. On the 1960 *Stanford Binet,* the PLDK lessons enhanced IQ gain scores, particularly for children in both i.t.a. plus PLDK.

These findings, while heartening, should be viewed with caution on two counts. *First,* it remains to be demonstrated that the increments in favor of i.t.a. and PLDK are lasting. The children will be measured again to determine if differences are discernible on a one-year follow-up. Furthermore, we would like to measure the children at the end of the sixth grade. However, attrition suggests this may not be feasible. *Second,* we are replicating the study where equal inducements are provided the teachers in T.O. approaches to reading. Preliminary findings do not suggest the same superiority of i.t.a. as was demonstrated in this first research project. However, until evidence counter-suggests, the i.t.a. and PLDK appear to hold promise for Southern inner-city slum children, particularly for Negro youth who bring to the school: (1) reduced functioning in verbal intelligence, (2) a restricted and non-standard form of English, and (3) an inability to articulate clearly many speech sounds. For such pupils an elemental, phonetic approach to beginning reading using the i.t.a. sound symbol system seems to hold much promise, especially when combined with oral language stimulation exercises from the Peabody Language Development Kits.

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## B. THE EXCEPTIONAL CHILD

The papers in this section represent the use of i.t.a. in an extremely diverse set of educational situations including dealing with problems of the Educable Mentally Retarded, the Emotionally Disturbed, and the Deaf and Hard-of-Hearing. Dr. Richard Woodcock's paper deals with Educable Mentally Retarded children with an average IQ 66. He reports the results of two years of research using i.t.a. with this group and a variety of beginning reading strategies, including i.t.a. He reports finding no significant difference after two years of instruction with i.t.a. when the final test is taken in traditional orthography. He does not report the number of percentage of EMR children who have completed the transition after two years of instruction. Mrs. Margaret Wallace, along with other authors in this section, emphasizes the importance of the "new appearance" of materials after the child has failed in T.O. She presents the results of a study attempting to match small groups of EMR children with i.t.a. and T.O. respectively. In general, she notes a greater degree of improvement when i.t.a. is used with EMR children than when T.O. is used.

Mrs. Mary Jackson presents a "case study" of the use of the Initial Teaching Alphabet with a group of emotionally disturbed institutionalized boys. Teachers may be interested in her deliberate use of "incorrect spelling" which should have applicability to almost any group or educational problem. As is true for other authors in this section, she emphasizes the "non-passive" use of i.t.a. She points out that, at least for this group of children, reading was important to them only when they could read aloud to her. One of the virtues of i.t.a. reported throughout these proceedings and in other publications is the ability for the beginning reader to "actively communicate" in writing or to be able to readily and easily read his materials aloud to an audience.

The remaining three papers in this section deal with problems of speech and hearing. Sister Frances Solano describes a set of procedures for the use of i.t.a. with such a group. Once again, her emphasis is on communication. She describes another unique possibility with i.t.a., retaining the alphabet after transition for subsequent use in speech training. Dr. John Duffy also presents a series of recommendations for the use of i.t.a. with the deaf and hard-of-hearing. He suggests when language and speech should be taught to the hearing impaired child; in what medium; in what way; and by whom. He comments specifically on the possibility of departure from "correct" i.t.a. spellings as a useful device and permissible under these limiting conditions. Normally, the i.t.a. Foundation is opposed to departures from standard i.t.a. spellings since this could result in considerable confusion and non-comparability of materials. In personal communication recently with Sir James Pitman, he notes, "I think it is right - where the circumstances are special and the difficulty for the learning child so great - to allow *in the classroom* an initial initial teaching medium.

"The child ought, however, soon to be made to pass from the initial initial teaching form to the i.t.a. form, because otherwise the costs become prohibitive of meeting the needs of what can only be called a new Tower of Babel.

"Teachers of the deaf in different speech areas will, if they are good enough phoneticians, be able to create and hand-produce classroom material to meet the great range of variety, in speech of their pupils, but this will need to be only during the initial initial learning stage; but teachers will lose greatly if they don't soon get into the medium in which 900 books are printed and many more will be coming available."

Dr. Ronald Goldman also emphasizes the communication role of i.t.a. and the need for appropriate materials for special educational problems. Once again, he emphasizes the notion that i.t.a. is, indeed, a medium which may be used for a variety of educational purposes depending upon the creativity of the user. A supplemental bibliography of articles dealing with the exceptional child is presented below.

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## 1. THE PEABODY-CHICAGO-DETROIT READING PROJECT -- A REPORT OF THE SECOND-YEAR RESULTS

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The primary purpose of this project was to compare six different approaches for teaching beginning reading to educable mentally retarded pupils. Two of these approaches utilized the Initial Teaching Alphabet as the beginning medium for reading instruction. The project began in June of 1964 and will terminate in November of 1967 upon completion of the final report. The classroom phase of the project began in September 1965 and continued until June 1967. All pupils participating in the project were essentially non-readers at the time of their entrance into the study. Altogether 834 pupils and 112 teachers participated in the study. Of these numbers, 321 pupils in 85 classes were in the study for the entire two year period. Ninety-four of these subjects, in 25 classes, were assigned to one of the two experimental approaches using i.t.a.

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* *Efficacy of Several Approaches for Teaching Reading to the Educable Mentally Retarded.* A three-year research and demonstration project supported by the U.S. Office of Education under the provisions of Title III, Section 302, of Public Law 88-164. Also supported in part by the Institute on Mental Retardation and Intellectual Development under a grant from the National Institute of Child Health and Development.

Description of the Experimental Approaches

Six approaches for teaching beginning reading to EMR pupils were compared and evaluated in the Peabody-Chicago-Detroit Reading Project.

These six approaches were as follows:

1. A *language-experience* approach using *traditional orthography* (LE-TO)

2. A *language-experience* approach using the *Initial Teaching Alphabet* (LE-ITA)

3. A *basal reader* approach using *traditional orthography* (BR-TO)

4. A *basal reader* approach using the *Initial Teaching Alphabet* (BR-ITA)

5. A *basal reader* approach using *rebus* (BR-REBUS)

6. A *programmed text* approach using *traditional orthography* (PT-TO)

The similarities and differences among the six approaches are portrayed in Figure 1. The vertical dimension of Figure 1 projects the differences among approaches in respect to the degree of *structuring*. Language-experience approaches are the least structured and are designed to capitalize upon speaking vocabulary, interests and experiences of the pupils. Programmed texts are highly structured and are planned to insure that each child will be exposed to a carefully graded sequence of learning activities. Basal reader approaches are moderately structured, thus falling between language-experience and programmed text approaches.

The horizontal dimension of Figure 1 projects differences among the experimental approaches in respect to the medium used during the initial stages of reading instruction. The "TO" approaches (traditional orthography) are those which make use of the standard English alphabet. The "ITA" approaches utilize the 44 sound-symbols of the Initial Teaching Alphabet developed by Sir James Pitman. The "ITA" approaches are two-stage approaches for teaching reading in which pupils first learn to read in i.t.a., then make transition to TO. The "REBUS" approach, being developed at Peabody, is also a two-stage approach. Pupils first learn to read with a vocabulary of picture-symbols (rebuses) instead of spelled words. After the pupil gains proficiency in reading with the picture-symbols, he begins a controlled program of phasing spelled words into the text in place of the rebuses. Examples of the rebus vocabulary and an illustrative rebus passage are shown in Figure 2. Each of these six approaches is briefly described below.

*The language-experience approach using traditional orthography (LE-TO).* A language-experience approach is based upon the premise that a reading program should be highly flexible in order to take advantage of the child's speaking vocabulary, his current and past experiences, and his interests. This approach is characterized by "experience chart" and "self-selection" procedures in contrast to the ready-made instructional materials associated with other approaches. The LE-TO approach utilizes the traditional 26-

| Degree of Structure | Medium | | |
|---|---|---|---|
| | Traditional Orthography | Initial Teaching Alphabet | Rebus |
| Low (Language Experience) | LE-TO (1) | LE-ITA (2) | |
| Moderate (Basal Reader) | BR-TO (3) | BR-ITA (4) | BR-REBUS (5) |
| High (Programmed Text) | PT-TO (6) | | |

Figure 1. The six approaches compared in the Peabody-Chicago Detroit Reading Project.

letter alphabet. Professional texts by Herrick and Nerbovig (1964) and by Lee and Allen (1963) were provided as guides for each teacher to follow in conducting the language-experience approach.

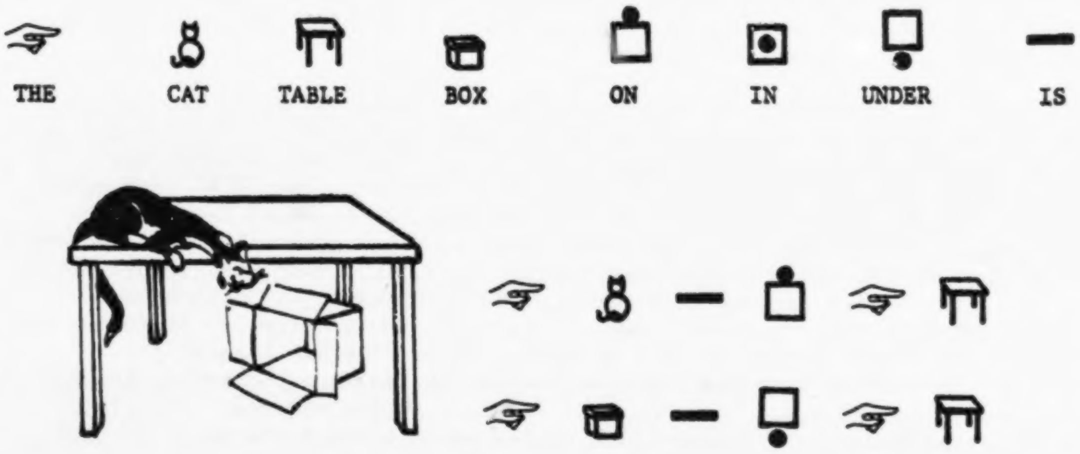

Figure 2. Illustrative rebus vocabulary and passage.

*The language-experience approach using the Initial Teaching Alphabet (LE-ITA).* The i.t.a. language-experience approach is based upon the same premise as the TO language-experience approach. The only difference between the two approaches is that the LE-ITA approach utilizes the Initial Teaching Alphabet rather than TO. The LE-ITA approach made extensive use of experience charts early in the program, and later shifted to an emphasis on reading trade books written in i.t.a. Each i.t.a. teacher shared a collection of 300 easy reading i.t.a. books with two other i.t.a. teachers.

Most of the students in this approach went through a transition program during the second year of the study using the *Workbook to Accompany Books 6 and 7* (Tanyzer & Mazurkiewicz, 1964) as the core of their transition program. The teachers in the LE-ITA approach were furnished the same professional references as the teachers in the LE-TO approach. In addition they received training in reading and writing i.t.a. through the use of a self-study workbook (Woodcock, 1965) and in-service meetings.

*The basal reader approach using traditional orthography (BR-TO).* A basal reader approach is characterized by the use of a coordinated series of readers, workbooks, and teacher's manuals. Such a series provides the teacher with a complete ready-made package of instructional material for teaching reading. The Harris and Clark series (1965), published by Macmillan, was selected for use in this experimental approach. The Harris and Clark series utilizes the 26-letter alphabet.

*The basal reader approach using the Initial Teaching Alphabet (BR-ITA).* The BR-ITA approach was similar to the BR-TO approach except for the use of the Initial Teaching Alphabet. Table 1 summarizes the sequence of materials used by the teachers in this approach. They began by using the *Auditory Discrimination Cards* (Downing). The next step was to use the first five Downing Readers (Downing, 1963). These readers were supplemented by a workbook prepared by one of the project teacher-consultants (Kelly, 1965). The remaining five Downing readers were used next. At the same time the pupils worked through *Ready for Reading* of the Early-to-Read series (Tanyzer & Mazurkiewicz, 1964). Subsequently the pupils worked through Book 4 of the Early-to-Read series. The Early-to-Read materials were not continued beyond this point, however, except to use the workbook for Books 6 and 7 during the transition program. In addition to the basic instructional materials, all supplementary materials and manuals on the market at the start of the project were used. The BR-ITA teachers were furnished the same set of 300 i.t.a. trade books used by the LE-ITA teachers for the supplementary reading portion of their programs. The BR-ITA teachers learned i.t.a. through the use of the self-study workbook by Woodcock (1965) and in-service meetings.

TABLE 1

SEQUENCE OF BR-ITA MATERIALS

| Downing Materials | Early-to-Read i.t.a. Program |
|---|---|
| Auditory Discrimination Cards | |
| Downing Readers: Books 1,2,3,4, Rev. A<br>Kelly, My i.t.a. Workbook | |
| Downing Readers: Books 5,6,7,8, Rev. B | Ready for Reading |
| | Dinosaur Ben<br>Houses |
| | Books 2,3,4 |
| | Workbook for Books 6 and 7 |

*The basal reader approach using rebuses (BR-REBUS).* The unique aspect of this approach was the use of rebuses as the first step in learning to read. Pupils develop a rather extensive rebus vocabulary soon after they begin to receive instruction in this medium. After the child gains proficiency in rebus reading, he proceeds through a transition program, gradually substituting spelled words in place of the rebuses. An experimental edition of the *Rebus Reading Series* (Woodcock, 1965-1966) was developed for use by the BR-REBUS group. This series consisted of readers, workbooks, teacher guides, and supplementary materials. At the completion of the rebus program the teachers moved into the primer level of any basal reading series of their choice.

*The programmed text approach using traditional orthography (PT-TO).* A programmed approach to reading instruction is based upon the belief that a child should be taken through a carefully devised series of steps in the process of learning to read. Each child in a programmed approach must respond actively to each step in the program. Following his response, the child learns immediately whether his response was correct or not. The programmed materials selected for this approach were those prepared by Sullivan and published by McGraw-Hill (Sullivan, 1963). This program is essentially comprised of a series of programmed workbooks through which each child proceeds frame-by-frame. The workbooks are supplemented by other materials including filmstrips and story books. The McGraw-Hill program is written in traditional orthography.

## Selection of Experimental Teachers and Pupils

Experimental teachers volunteered for this assignment in the Spring of 1965. The project director met with interested teachers and explained the project and the responsibilities of an experimental teacher. Teachers who volunteered to participate in the project were randomly assigned into the six reading approaches. There was one exception to this procedure -- teachers who had any strong adverse feelings about being assigned to one particular approach were given the opportunity to indicate this. About one-third of the teachers indicated such aversions and these were honored by randomly assigning those teachers into one of the five remaining approaches. All teachers involved in the project had had at least one year of experience in teaching EMR children.

A total of 607 pupils, enrolled in 112 classes, participated as experimental subjects at the beginning of the project. The number of subjects in each of these classes varied from two to twelve, and averaged five. The entire class was not included since the aim of the project was to gather information on the results of *beginning* reading instruction.

Three hundred and twenty-one pupils in 85 classes were still in the study by June 1967. These 321 subjects contributed the data of primary concern in this study. In September 1965 the mean chronological age of the 321 subjects was eight years and eight months, the mean IQ was 66, and the mean mental age was five years and nine months. At the end of the project the mean chronological age was ten years and five months, and the mean mental age was six years and nine months. Table 2 summarizes the CA, IQ, and MA data of the experimental subjects. (All chronological ages and mental ages have been adjusted to October 31, 1966 as the basis for comparison). These means were tested by the analysis of variance for significant differences among the six approaches. There were no significant differences among CA's, IQ's or MA's at the .10 level of significance.

## Procedure

The project was scheduled for three years, beginning in June 1964, and extending until November 1967. During 1964-65 the project staff was engaged in specifying and organizing the instructional programs and materials associated with each of the six approaches. Additional tasks accomplished during the first year of the project included completing several small-scale pilot studies related to the feasibility of the rebus approach and selecting the school districts and teachers to participate in the demonstration phase of the study. The demonstration phase began in September 1965 and was completed in June of 1967. During this two-year period each teacher was asked to use her assigned approach and materials with those children in her class who were at the readiness and beginning stages of learning to read.

TABLE 2

CA, IQ, AND MA SUMMARY DATA

| Approach | No. of Classes | No. of Subjects | | CA (10/31/66) | IQ | MA (10/31/66) |
|---|---|---|---|---|---|---|
| LE-TO | 14 | 60 | $\overline{X}$ | 118.9 | 65.9 | 78.1 |
| | | | s | 14.8 | 8.0 | 7.9 |
| LE-ITA | 10 | 42 | $\overline{X}$ | 115.8 | 67.0 | 77.3 |
| | | | s | 12.8 | 9.3 | 9.6 |
| BR-TO | 16 | 59 | $\overline{X}$ | 119.1 | 65.2 | 77.0 |
| | | | s | 13.6 | 9.2 | 10.4 |
| BR-ITA | 15 | 52 | $\overline{X}$ | 120.6 | 65.8 | 78.7 |
| | | | s | 15.5 | 10.4 | 11.3 |
| BR-REBUS | 17 | 74 | $\overline{X}$ | 115.6 | 68.0 | 77.8 |
| | | | s | 15.3 | 9.9 | 8.6 |
| PT-TO | 13 | 34 | $\overline{X}$ | 117.8 | 64.4 | 75.3 |
| | | | s | 16.1 | 9.4 | 10.3 |
| TOTAL | 85 | 321 | $\overline{X}$ | 117.9 | 66.2 | 77.5 |
| | | | s | 14.8 | 9.5 | 9.6 |
| | | | F-ratio | 1.37 | 1.02 | 0.59 |

One teacher from each approach, in each city, was assigned additional responsibilities as a teacher-consultant. The teacher consultants were responsible for coordinating the activities of their group, chairing in-service meetings, distributing material, and in other ways facilitating the administration of the project. These teacher-consultants were brought to Peabody College during the Summer of 1965 for one month. During this month they were responsible for becoming throughly familiar with the approach and materials to be used by their group. In addition, they studied the other five approaches and participated in the overall planning and preparation for beginning the classroom phase of the project.

The equivalent of three half-day in-service meetings were held early in September 1965 to assist the experimental teachers in understanding their role and in becoming better prepared to use their assigned approach. During the remainder of the project each group of teachers had in-service meetings every month or two. The primary purpose of these meetings was to discuss common problems facing the group and to allow an exchange of ideas. Each teacher in the study was provided specific information in respect to the techniques and materials which were appropriate for her to use as part of that experimental approach.

Two aspects of the instructional program were common to all the approaches. First, there was an extensive program of supplementary reading utilizing materials drawn from classroom and library collections, and supplemented by project acquisitions, such as the collections of i.t.a. trade books. Second, the *Peabody Language Development Kits* (PLDK) (Dunn & Smith, 1965, 1966) were furnished each experimental teacher. PLDK Level #1 was used during the first year of the project and the Level #2 during the second year. The use of these kits provided a greater degree of standardization in respect to the total language arts program. The kit was used daily with the entire class for about 30 to 40 minutes. PLDK lessons provide activities designed to develop oral expression, oral receptive and verbal reasoning skills. No reading or writing *per se* is involved.

### Instrumentation

The evaluation instruments used in this project included the *Metropolitan Achievement Tests* (MAT) by Durost and others (1959); the *Primary Mental Abilities Tests* (PMA) by Thurstone and Thurstone (1963); and the *Beginning Reading Tests* (BRT) by Woodcock and Pfost (1967).

*The Primary Mental Abilities Test.* The PMA for grades K-1 was administered to all experimental subjects during the Fall of 1965 and again during the Fall of 1966. These tests were administered by the classroom teachers to children participating as experimental subjects. The tests were scored by project staff at Peabody College.

*The Metropolitan Achievement Tests.* The reading subtests of the Primary I Battery of the MAT were administered to all experimental subjects in June of 1966 and again in June of 1967. The MAT reading subtests include measures of Work Knowledge, Word Discrimination and Reading. The TO edition of this battery was used with all subjects. Tests were administered by members of the project staff who went into the classrooms in Chicago and Detroit for this purpose.

*The Beginning Reading Test.* The BRT contains subtests of Letter Recognition, Word Reading, Sentence Reading and Comprehension. The entire test is in traditional orthography. This test was developed to meet the needs for an instrument which would discriminate among children who are achieving at the early levels of first grade achievement in reading. The Letter Reading subtest contains 40 items presenting a discriminating mixture of upper and lower case, sans-serif and Roman style letters. The Word Reading test contains a set of 60 words drawn from those words most commonly found in beginning reading programs. The Sentence Reading test is a set of 60 sentences to be read at sight. The Comprehension test contains 50 items. The items in each subtest are arranged in order of difficulty and a cutting score is used to terminate each subtest for a subject. Table 3 presents split-half reliabilities corrected for length by the Spearman-Brown formula, for three of the subtests. Also included in Table 3 are the intercorrelations among the subtests.

### Results

During June of 1967, all experimental subjects were administered the MAT and the BRT, providing a set of seven criterion scores for each pupil. The means of these criterion measures, by approach, and for the total group are presented in Table 4. The means for subtests of the MAT are expressed in grade equivalents and the means for the BRT subtests are expressed in raw score units. The differences among means for each of the criterion measures

TABLE 3

BEGINNING READING TEST
RELIABILITIES AND SUBTEST INTERCORRELATIONS

| | Letter Recognition | Word Reading | Sentence Reading |
|---|---|---|---|
| Letter Recognition | .97* | | |
| Word Reading | .69 | .98* | |
| Sentence Reading | .64 | .95 | .98* |
| Comprehension | .59 | .85 | .85 |

* Split-half reliabilities corrected for length.

was tested by the analysis of variance. Table 4 presents the results of these analyses. None of the criterion measures differed significantly among the approaches at the .05 level of significance.

TABLE 4

SUMMARY DATA: JUNE 1967 CRITERION MEASURES

| | | Metro. Achiev. Tests | | | Beginning Rdg. Test | | | |
|---|---|---|---|---|---|---|---|---|
| Approach | | WK | WD | Rdg. | LR | WR | SR | Comp. |
| LE-TO | n | 59 | 59 | 59 | 60 | 60 | 60 | 60 |
| | $\overline{X}$ | 1.66 | 1.67 | 1.58 | 29.2 | 32.4 | 21.6 | 25.3 |
| | s | 0.33 | 0.47 | 0.31 | 11.2 | 20.5 | 17.9 | 15.2 |
| LE-ITA | n | 38 | 38 | 38 | 42 | 42 | 42 | 42 |
| | $\overline{X}$ | 1.61 | 1.58 | 1.55 | 24.4 | 23.3 | 14.5 | 19.9 |
| | s | 0.38 | 0.39 | 0.36 | 13.7 | 19.8 | 17.5 | 15.2 |
| BR-TO | n | 56 | 56 | 56 | 59 | 59 | 59 | 59 |
| | $\overline{X}$ | 1.58 | 1.54 | 1.56 | 29.8 | 25.4 | 16.2 | 20.2 |
| | s | 0.40 | 0.46 | 0.43 | 11.4 | 18.6 | 16.1 | 15.6 |
| BR-ITA | n | 46 | 46 | 46 | 52 | 52 | 52 | 52 |
| | $\overline{X}$ | 1.59 | 1.60 | 1.48 | 29.3 | 25.4 | 16.8 | 18.2 |
| | s | 0.38 | 0.59 | 0.34 | 11.6 | 18.3 | 16.3 | 14.0 |
| BR-REBUS | n | 66 | 66 | 66 | 74 | 74 | 74 | 74 |
| | $\overline{X}$ | 1.56 | 1.53 | 1.50 | 28.7 | 25.5 | 17.2 | 20.4 |
| | s | 0.47 | 0.36 | 0.35 | 11.2 | 17.8 | 16.3 | 14.0 |
| PT-TO | n | 32 | 32 | 32 | 34 | 34 | 34 | 34 |
| | $\overline{X}$ | 1.56 | 1.48 | 1.47 | 30.5 | 23.4 | 14.3 | 21.1 |
| | s | 0.52 | 0.51 | 0.35 | 9.5 | 17.9 | 15.5 | 14.4 |
| TOTAL | n | 297 | 297 | 297 | 321 | 321 | 321 | 321 |
| | $\overline{X}$ | 1.59 | 1.57 | 1.53 | 28.7 | 26.2 | 17.1 | 20.9 |
| | s | 0.41 | 0.47 | 0.36 | 11.6 | 19.1 | 16.8 | 14.9 |
| | F-ratio | 1.78 | 1.27 | 1.72 | 1.48 | 1.68 | 1.29 | 1.49 |

## Summary and Discussion

Six approaches for teaching reading to young, educable mentally retarded pupils were compared in the Peabody-Chicago-Detroit Reading Project. At the beginning of the two-year classroom phase of the project, the 321 experimental subjects had a mean mental age of five years, eight months; a mean chronological age of eight years, eight months; and a mean IQ of 66. All subjects were non-readers or essentially so at the beginning of the study. These subjects were administered seven reading achievement measures in June 1967. The mean gain in the various subtests was approximately five and one-half months. No significant differences among any of the approaches was noted in this study. These results suggest that with young EMR children, relatively little gain is to be expected during the first two years of instruction if they are non-readers at the time of initiating instruction. Furthermore, it would appear that approach does not have a significant effect on reading achievement at this stage.

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## 2. I.T.A. AND MENTALLY HANDICAPPED ADOLESCENTS

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Mentally handicapped children encounter great difficulty in developing reading skills so it is important that a systematic plan be followed for their instruction in reading. Mentally retarded children are those who have been diagnosed as having intellectual deficits, who are unable to profit sufficiently from the general curriculum of the public schools, but who can be educated to become socially and vocationally competent citizens, particularly if special education facilities are furnished. (Kirk and Johnson, 1951).

Because mentally retarded children have a slower rate of learning, conventional language and reading programs must be modified to their needs in terms of strengths and deficits. These children do not communicate easily, nor do they understand most words in ordinary conversation. The educable retarded child cannot be hurried, nor can he be coerced into learning; he will progress at his own speed. (Garton, 196[illegible]).

Mentally retarded children are not receptive nor interested in materials with which they have already experienced failure during early school years. Most mentally handicapped students desire to read in spite of their negative attitude. This apparent non-interest is a conditioned defense against feelings of inferiority. Inferiority originates from a concept of being unsuccessful and defeated in competitive educational situations. In contact with educational pressures the retardate has learned expectations of defeat and failure. The attitude of inferiority, a defense mechanism, is a frantic attempt to resolve the conflict. (Shaffer and Shoben, 1956). In this context it is significant to note that even the normal child who repeatedly fails develops a defensive attitude toward the tedium of repetitious school experiences that he has been exposed to year after year. It appears, logically, that the retardate does much the same as his normal peers, but he makes even greater use of a defense mechanism to alleviate his failure experiences because they are constantly with him.

With these concepts of learning behavior in mind, i.t.a., a new reading technique was employed in a study with educable retarded adolescents. With the use of this new instrument it was hoped the retardates would mobilize their limited resources and become better grounded in reading skills. The i.t.a. program promised to be an innovation which might help resolve the problems related to failure conditioning and abstraction intrinsic to reading instruction for retarded children.

Because there are sufficient symbols in the i.t.a. alphabet so that all of the sounds we use in T.O. have a representation and because there are no upper case letters or symbols, the only difference encountered in reading and writing i.t.a. symbols would be the size of the symbol. For capitalization purposes, a larger symbol of the same design is used rather than an entirely different one as we find in T.O. Partly due to these two reasons, it was anticipated that there would be less confusion and frustration in learning reading skills. And since it was a new and different media, and one with which they had experienced no failure, i.t.a. was expected to become attractive to these adolescent retardates and it was conjectured that they would not attempt defensive rejection.

Because of psychological problems inherent in teaching of retarded children, It was felt that instructional materials should be of such a nature that success, social approval, and recognition would be attained from accomplishment. i.t.a. was selected as a medium for development of reading and language skills with a group of mentally retarded adolescents, not only because it was new, different, and interesting; but also because it minimizes the abstraction of learning various sound symbols. Abstract learning frequently is difficult for the mentally handicapped child. The phonetic emphasis of the alphabet and the published record of successes experienced in other programs that were in progress were also points of consideration in selecting the i.t.a. program.

Visitations were made to the Monroe County Schools and Oakland County Schools in Michigan where the programs were in operation and it was noted that successes and achievement were evident in all classes.

Selection of the i.t.a. program as a teaching tool in the classroom was predicated on the assumption that certain objectives could be achieved. Those objectives were:

I. To improve basic reading skills and to aid the learner to read at least functionally at a level necessary for his daily needs and, hopefully, for pleasure.

II. To enable the student to express himself orally as well as graphically.

III. To improve reading comprehension by improving reading and language skills. Through achievement of these skills it was expected that the general instructional level would be expanded.

In the implementation of the objectives cited above it was assumed that attitudes in the classroom would change. The general attitude in the typical educable classroom is one of reaction to accumulated failure and a collateral defensive attitude toward anything with academic orientation. Since mentally retarded children are already conditioned to failure they have a fear of trying to learn anything new. High motivation, however, may be achieved with any student, retarded or otherwise, when the proper instrument is applied in a conducive climate.

The subjects selected to participate in this study came from a rural community which is primarily agricultural. All of the students live on farms and the income of the families is primarily from agriculture or agriculture-factory employment.

These children had all been diagnosed mentally handicapped and were enrolled in a special education program at the secondary level. There were thirty students in the entire group which consisted of twenty-four boys and six girls. The division of the group into a control group and an experimental group was made to facilitate comparison in growths in instructional reading level and potential reading level between the two groups and to show how the growth related to the two instructional methods: the traditional reading approach and the i.t.a. method. By separating them physically and instructionally so that only the experimental group was exposed to i.t.a., it was possible to make a comparison of differences in growth in each method.

The subjects were paired as closely as possible according to IQ, age, and reading ability. Of the thirty in the room two matched groups of eleven were selected. One group received the traditional reading instruction in T.O. and the matched group assigned to an experimental section was exposed to i.t.a.

The reading text used to select subjects for the experiment and to match them according to ability was the *Botel Reading Inventory* administered on February 1, 1966. These tests have been designed for estimating reading ability.

After administration of tests it was found that the difference in reading instructional level between the matched pairs varied from .1 to 3.5 grade level. The IQ range extended from no difference to a difference of 7 points. The age difference had to be greater because of the age population; eight of the pairs, however, were within six months range, and three pairs were from seven to ten months different in age.

Instruction in the control group followed conventional reading instructional procedures, consisting of a core including communicative language skills and social studies. Materials used were: *Weekly Readers*, Reader's Digest Skill Readers, an English and Social Studies Workbook, and a Spelling Workbook of the *Spelling for Word Mastery Series*. The classes were conducted on a traditional basis with some individualized instruction on a one-to-one basis or in small ability determined groups.

In the experimental group the children were surrounded by i.t.a. and instruction developed from the i.t.a. theory: *Weekly Readers*, transliterated into i.t.a., were used occasionally and language arts were developed from an experience chart type of reading instruction. S.R.A. reading laboratory materials were modified and activities developed and enlarged from these materials to accommodate individual needs. Since the reading instructional level ranged from pre-primer to sixth grade level, it was impractical to assign all subjects to one group. Two were on a one-to-one basis and the rest in two groups according to reading ability. Directions were placed on the wall in i.t.a. The different locations in the room were indicated in i.t.a. All furniture, equipment, closets, stove, cupboards, and refrigerator were labelled in i.t.a. All bulletin boards were done in i.t.a. In this way the experimental group was exposed to a contrived i.t.a. environment comparable to the one in which students in the control group moved. All materials were either in i.t.a. or transliterated into i.t.a. For all intents and purposes the students were contained in a total i.t.a. environment. It gave them, also, a continued awareness and constant reminder of the new tool we were using. The children were rigidly grouped and the beginning instruction was given to all at the same time using the same media and technique.

To be able to read successfully in i.t.a. the subjects must necessarily learn the symbols of the new alphabet. The procedure for presenting the alphabet consisted of introduction of the symbols a few at a time, and in the order suggested by the *i.t.a., Early-To-Read Program* by Pitman. An overhead projector was found to be most helpful in this presentation as the students could observe the demonstration of writing the symbols and practice writing them during the presentation on the overhead projector.

An intensive "hot-housing" procedure was used at first to develop an awareness of the alphabet being used. Many kinds of instructional material were used. Although commercial materials were valuable and helpful to the program few were fully adaptable to this experiment because of the implied interest level and illustrations employed. Before the commercial auditory discrimination cards were available from i.t.a., teacher-made cards of this type were made and used. These were pictures illustrating beginning, middle, and ending sounds selected from colored magazine illustrations and mounted on shirt boards. These made an attractive as well as an educational media for reinforcement of the sounds. These auditory discrimination cards, both commercial and teacher-made, proved to be invaluable teaching aids. Use of these cards led to the discovery of the multitude of discrepancies in word attack skills which previously had not been identified.

As soon as a few symbols were assimilated instruction started with simple words. Each day new words were synthesized and learned from the sounds. As new symbols and words were learned simple sentences were built which led to language arts development including writing, speaking, and reading. Reading experience charts, in which the students were allowed to make the charts cooperatively using their new alphabet, were utilized as an aid.

Enthusiasm was evident from the beginning because of the difference in technique of self-expression. The Word Building Kit was another teaching aid which was very helpful. With this kit the students were encouraged to build dictated words and sentences. Manipulation of this aid had some interesting side effects, i.e. it was noticed that students who had difficulty in fine motor skills showed improvement. One student, who appeared to be rather well coordinated, had great difficulty in selecting the symbols in terms of picking them up from the box in which they were contained. He encountered a great deal of difficulty as well as frustration in picking up the symbols and placing them in the groove indicated for the word building experience. Through determination and desire to participate and experience success he was able to improve many of the motor disabilities initially noted.

In order to keep the proper motivational level it was necessary to adapt materials that would be of interest to the group: S.R.A. materials and particularly the *Rochester Occupational Reading Series* were adapted and a unit on Truck Farming was selected because of the interest in agricultural activities. Units were selected from the text and converted to i.t.a. using those parts which were most meaningful in experiences, language development and word attack skills. These materials not only provided reading materials, but also extended language arts activities. In the instructional periods both groups received an equal amount of reading instruction.

After the second test was administered in June of 1966, it was found that in nine pairs the students in the experimental group had shown growth while the students from the control group showed growth in only six cases. One of the experimental group showed no growth whatever, while five in the control group showed no demonstrable growth. In general the program presented in i.t.a. showed significant results.

The prediction was that the experimental group would show greater growth than the control group. Because the direction of the differences was predicted and because the experimental group deviated significantly from the normal population the non-parametric "sign-test" and the Manns-Whitney U Test were selected as instruments for statistical analysis. The reading growth in instructional level was measured by a test - re-test administration of the *Botel Reading Laboratory*.

The signs of differences in improvement levels indicated only one pair showed differences in the opposite direction from that predicted, i.e., in this case the member of the control group showed greater improvement than the member of the experimental group. For one couple there was no difference in the rate of improvement of instructional level. In the remaining nine cases the couples showed difference in the predicted direction. The hypothesis was that 11 subjects trained in i.t.a. would transfer their knowledge to the conventional reading program and then would improve their instructional level in reading significantly more than would the 11 subjects in the control program. The comparison was in terms of the growth in the instructional level based upon grade averages shown by each member of the sample. It was concluded that the subjects in the experimental group did show greater improvement in level of reading instruction than did those in the control group at a statistically significant level so the hypothesis was supported.

Empirical outcomes from the program appeared to be quite dramatic; frustration levels at attacking new materials became less evident; enthusiasm for reading independently became the rule rather than the exception, and attempts to read library materials provided developed attitude toward reading and learning. These attitudes were improved appreciably with observable carry over.

## TABLE I

## GROUPING AND SELECTION OF ELEVEN PAIRS OF STUDENTS AS TO SEX, C.A., M.A., I.Q., BEGINNING READING LEVEL, AND PROGRAM LENGTH IN AN EXPERIMENTAL AND A CONTROL GROUP OF MENTALLY RETARDED CHILDREN

| | NAME | SEX | C.A. | M.A.* | I.Q. | BEGINNING READ LEVEL | LENGTH OF TIME IN PROGRAM |
|---|---|---|---|---|---|---|---|
| (A) | L.S. | M | 15 - 8 | 11 - 2 | 75 | 4 | 0 - 9 |
| (B) | L.K. | M | 15 - 8 | 11 - 3 | 75 | 3.1 | 4 - 0 |
| (A) | B.D. | M | 17 - 7 | 9 - 10 | 61 | 3.6 | 4 - 0 |
| (B) | B.C. | F | 17 - 6 | 10 - 4 | 64 | 3.2 | 4 - 0 |
| (A) | S.S. | F | 16 - 1 | 9 - 9 | 64 | 3.1 | 8 - 0 |
| (B) | A.G. | M | 15 - 9 | 10 - 2 | 68 | .5 | 4 - 0 |
| (A) | K.S. | M | 18 | 11 - 11 | 74 | 3.1 | 4 - 0 |
| (B) | H.V. | M | 17 - 4 | 12 - 0 | 76 | .5 | 8 - 0 |
| (A) | D.M. | M | 15 - 11 | 11 - 3 | 74 | 2.1 | 7 - 0 |
| (B) | J.B. | M | 15 - 8 | 11 - 0 | 74 | 1.6 | 5 - 0 |
| (A) | D.J. | F | 12 - 11 | 9 - 6 | 76 | 2.7 | 1 - 0 |
| (B) | J.I. | M | 13 - 6 | 9 - 7 | 74 | 2.6 | 7 - 0 |
| (A) | D.D. | M | 15 - 8 | 8 - 9 | 59 | 2.6 | 6 - 0 |
| (B) | T.G. | M | 16 - | 9 - 0 | 56 | .5 | 5 - 0 |
| (A) | S.C. | F | 13 - 8 | 9 - 6 | 73 | 3.1 | 4 - 5 |
| (B) | W.S. | M | 14 - 1 | 9 - 3 | 69 | .0 | 3 - 0 |
| (A) | L.F. | M | 15 - 5 | 10 - 5 | 71 | 5.0 | 1 - 0 |
| (B) | S.M. | M | 14 - 10 | 11 - 0 | 78 | 3.1 | 6 - 0 |
| (A) | R.K. | M | 16 - 2 | 9 - 1 | 59 | 1.6 | 4 - 0 |
| (B) | G.S. | M | 15 - 5 | 9 - 0 | 62 | 1.1 | 7 - 0 |
| (A) | S.E. | F | 15 - 8 | 9 - 2 | 62 | 4.5 | 5 - 0 |
| (B) | E.L. | M | 14 - 10 | 9 - 8 | 69 | 1.0 | 4 - 0 |

A = Control Group B = Experimental Group

* Test administered to indicate the M.A. were W.R.A.T., W.I.S.C., and Bender Gestalt.

## TABLE II
## (INSTRUCTIONAL)

## DIFFERENCES IN RATE OF IMPROVEMENT OF READING INSTRUCTIONAL LEVELS BETWEEN A CONTROL GROUP AND AN EXPERIMENTAL GROUP OF MENTALLY HANDICAPPED CHILDREN

| GROUP | CONTROL GROUP (A) | EXPERIMENTAL GROUP (B) | DIRECTION OF DIFFERENCE | SIGN |
|---|---|---|---|---|
| A | - 1 | + .4 | $X_A$ $X_B$ | + |
| B | + .35 | + .4 | $X_A$ $X_B$ | + |
| C | + .1 | + 1.6 | $X_A$ $X_B$ | + |
| D | + .5 | + 1.65 | $X_A$ $X_B$ | + |
| E | + .05 | + .55 | $X_A$ $X_B$ | + |
| F | + 1.3 | + .05 | $X_A$ $X_B$ | - |
| G | -0- | + 1.7 | $X_A$ $X_B$ | + |
| H | -0- | -0- | $X_A$ $X_B$ | -0- |
| I | -0- | + 1.35 | $X_A$ $X_B$ | + |
| J | + .5 | - .6 | $X_A$ $X_B$ | + |
| K | -0- | + 1.65 | $X_A$ $X_B$ | + |
| | | | | 11-9 |

x = 1 = fewer signs

N = 9 = matched pairs that showed instructional growth

## TABLE III
## (POTENTIAL)

### DIFFERENCES IN RATE OF IMPROVEMENT OF READING POTENTIAL LEVELS BETWEEN A CONTROL GROUP AND AN EXPERIMENTAL GROUP OF MENTALLY HANDICAPPED CHILDREN

| GROUP | CONTROL GROUP (A) | EXPERIMENTAL GROUP (B) | DIRECTION OF DIFFERENCE | SIGN |
|---|---|---|---|---|
| A | -0- | + 1 | $X_A$ $X_B$ | + |
| B | -0- | -0- | $X_A$ $X_B$ | -0- |
| C | .1 | -0- | $X_A$ $X_B$ | - |
| D | -0- | + .8 | $X_A$ $X_B$ | + |
| E | -0- | + 1.8 | $X_A$ $X_B$ | + |
| F | -0- | + .9 | $X_A$ $X_B$ | + |
| G | -0- | + 2.2 | $X_A$ $X_B$ | + |
| H | -0- | -0- | $X_A$ $X_B$ | -0- |
| I | -0- | + 1 | $X_A$ $X_B$ | + |
| J | .1 | -0- | $X_A$ $X_B$ | - |
| K | -0- | -0- | $X_A$ $X_B$ | -0- |
|  |  |  |  | 11-6 |

x = 2 = fewer signs

N = 6 = cases in which improvement in *potential* was noted by members of the experimental group over members of the control group.

In two of the cases the definite intense concentration of sounding out of unfamiliar words brought about a radical change of attitude from "I can't" to "is this right". The improvement in instructional reading levels in these cases ranged from pre-primer at the beginning of the program to third grade level at the conclusion.

More interest in classroom procedures in all cases were evident. By the end of the experimental period, a definite improvement was noted in behavior, attitude and in instructional level.

In a single case, the student who was a familial retardate with an emotional barrier showed no increase in reading level instruction. It is possible, however, the tests did not measure skills that did develop because in the regular classroom sessions a definite progress was noted in this case.

Another implication of the i.t.a. program was the regular attempts at transition to T.O. Because of their previous experience with T.O. there had been retention of some sound symbols and vocabulary. Skills possessed were transferrable from i.t.a. to T.O. An appreciation level of generalization of skills was also noted in relation to the transition from i.t.a. to T.O. Although no actual transition materials were used, these subjects tended to move constantly to the T.O. and indications were that the transition period trepidations which concern many educators will be diminished -- at least for this group of mentally retarded students.

One of the most useful and enlightening results were the discoveries of deficits in reading mechanics previously ignored by teachers. One of the most outstanding discoveries seemed to be receptive auditory discrimination. Difficulties in visual and expressive auditory discrimination were also noted. Through the use of the auditory discrimination cards it was learned that each child in the experimental group had some auditory distortion at the receptive or expressive levels. For example, "i" for "o" as in the word "window" was a common error. In several instances this distortion of "windi" for "window" was apparent.

New techniques of educational presentation are subject to question concerning their efficiency until investigation has shown their value. Innovation, particularly in reading instruction, should not be taken at face value. This research has many implications for improving reading skills for the mentally handicapped child. It has shown that instructional levels can be raised significantly. To raise instructional levels from pre-primer to a third grade level in a four month period indicates potentiality for this technique of teaching reading.

It was concluded that with the aid of available materials and proper teacher supervision the transitional period will pose no great problem. If successes cannot be gained in the homogenous group then a one-to-one type of instruction will be more likely to bring about success and avoidance of failure. For the teacher who, through her program, analyzes the particular problems of each individual and is able to supply the needed instruction to provide for success, i.t.a. offers a valuable technique for improving reading instruction. It has been concluded that i.t.a. can be successfully used with mentally handicapped for these reasons: it is new and different and something with which he has experienced no previous failure; there is a minimization of abstraction; learning of fewer symbols, which have one sound only and thus decrease frustration; successes in word attack skills lead to diminishing failure situations. It also promotes an attitude of interest in learning to read because of the less frustration encountered when using i.t.a.

By increasing the stimuli to learning with the use of i.t.a. with mentally handicapped children it is hoped that an acceleration of learning throughout their program of special education will be experienced.

It would be a desirable situation for the mentally handicapped student to receive instruction in the i.t.a. phonetic approach to language development and reading skills before he reaches the secondary level in his educational program. If the basic reading skills have been acquired by the time the student reaches the secondary level of the educable program less time will have to be spent on drill of these skills. More programming in vocational and job placement education can be carried on, which should be the core of the curriculum at this level. If continuity of reading instruction could be followed throughout the retardate's school career, it would enable him to adapt more readily to the job preparation and job placement programs.

The i.t.a. program is not one that can be used as a panacea for all reading problems. It is assumed that at least a minimum of two years of intensive i.t.a. instruction will be necessary for substantial results including full transition to T.O. The individual student's rate of learning is an important factor for consideration in terms of length of time required. This study has pointed out that if the conditions of instruction remain the same the program in i.t.a. could progress rather rapidly. i.t.a. appears to be more easily modified to accommodate individual needs than many traditional reading programs.

In conclusion this study shows that i.t.a. is an "open door" for the mentally handicapped student and should be considered carefully as a teaching technique. Teacher observation of the satisfactions the experimental students have had with little successes suggests that i.t.a. is worthy of serious consideration for further use.

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## 3. INITIAL TEACHING ALPHABET AND THE EMOTIONALLY DISTURBED INSTITUTIONALIZED BOY

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Initially, let me assure everyone that we at Highland are not a research center. This was not a control class of boys learning to read via the traditional orthography (T.O.) or the Initial Teaching Alphabet (i.t.a.) method. We simply heard about i.t.a. and hoped it would help us to better teach our boys to read. The boys for the classes (2) were selected only on the basis of their low reading levels. At the end of the school year, we compared the reading progress of the i.t.a. classes with that of the T.O. classes (on the same reading level) and found the greater achievement was made by the i.t.a. boys.

Highland Training School is an institution consisting of approximately 275 emotionally disturbed boys ranging in age from 9 to 14. By the time this conference is held in August, we will probably have, in addition, 40 girls.

These children are committed to the institution by the courts of New York State. Although our populace can come from all areas of the state, about 90 percent of them are from the New York City area. Our boys are generally from the low socio-economic White, Negro, and Puerto Rican families. They have gotten into difficulty in the home, the community, or the school. Of course, they may have created problems in all of these areas. They have little or no respect for law or the rights of others. In their minds, a crime has not been committed unless an individual has been apprehended.

Most of them come to us with a dislike for school and everything and everyone connected with academic learning. They are distrustful of all adults and even their own peers. They are fearful of their environment and the instability of life. They have little or no respect for themselves or for others. This antisocial attitude, in addition to their many other problems, presents quite a challenge to the teacher waiting at the institution to receive the new boy.

The majority of boys entering Highland read on a second-grade level or lower. Let's say a boy of 11 years, a non-reader, arrives at the institution. Someone has been trying to teach this boy to read the T.O. method for six or seven years, depending on the age at which he first entered school. It is not difficult to understand the amount of frustration and anxieties which have built up over such a long period of time. Some of them have completely given up. This is the boy committed to Highland and placed into an i.t.a. class of 10 - 12 boys. The teacher's primary job is getting to know this boy.

i.t.a. is most effective when the first few weeks are spent in getting to know the class -- explaining about i.t.a. and how easily one can learn to read with it: getting the class to feel it is different because it is learning something different; allowing the boys to look through the various books; allowing them to select things around the room to be labelled or posters to be made. I found the boys took pleasure in pointing out items around the room, which I had "forgotten" to label. They wanted to cut out pictures and have me label them. Watching me make labels, some of them began the practice of making the symbols and asking about the sounds before I had officially begun to teach class.

Now it was time to talk of the importance of learning to read. I talked so much about reading during those first few weeks, some of them must have decided to learn to read to keep me quiet. It was extremely important to inspire in them a sense of confidence in me. I had to convince them that if they would work with me, they could ready any of the books in the classroom within a short period of time.

Since all the books have pictures, the boys were able to see the various types of stories found in the reading series. A boy of 11 or 12 is not interested in "Look, look, look," "See Jane Run," or "Run, Dick, run". In the i.t.a. series, after learning some of the sounds they can begin to read of astronauts, divers, explorers, or fairy tales. This unfolds a whole new world for them.

About two weeks after school started, I began to teach the sounds formally. At first I taught them in the order in which the Teacher's Guide suggested. As the boys changed, my methods changed. Enthusiasm caused many of them to want to learn sounds not called for in the day's lesson. Often this caused me to alter my teaching plan in the middle of a lesson. If I thought that their attention span might be lengthened by teaching a different sound, then teach that sound I would. The attention span of the emotionally disturbed is usually very short. Sometimes gimmicks must be thought of and used on the spur of the moment.

One day I made a mistake in writing some words on the board and one of the boys saw and corrected it. Both he and I were elated. We both realized that he was really sounding out words and reading them. How else could he have noticed the mistake? From that day on, this became one of my teaching methods. Incorrect spellings were often put on the board. Each boy began to see how many he could find. It became so competitive, arguments sometimes developed. Right or wrong, I felt in this case, the end justified the means. My boys, without realizing how it happened, were finally learning to read. Most of them went through *Dinosaur Ben* and *Houses* without difficulty. When we began i.t.a., *Rides* was not a part of the series.

Each boy must be given individual attention daily. As the boys began to read, they insisted that I listen to them. In their minds it was only important to read if I would listen. A schedule had to be made whereby each boy was given fifteen minutes to read just to me. Of course, it was not always possible to keep to the schedule. Emotionally disturbed boys have problems which do not disappear simply because the boys enter an institution. Whenever the schedule had to be altered so that a boy could not read, he might sulk for hours. It was wonderful to realize just how much these boys had learned to want to read.

The workbooks were more difficult to use. Many of these children have not learned the art of speaking in complete sentences; therefore they have problems writing complete sentences. We first talked a great deal about the pictures found in the workbooks, and I wrote short sentences which developed into short stories. As we progressed, they began to dictate sentences to me. Later the dictation was reversed -- I dictated short sentences to them, which were developed into short stories. (One must always bear in mind that one cannot expect the same type or caliber of sentences from our emotionally disturbed children as from the "normal" children of the same chronological age. Their backgrounds are usually so different. Since our boys remain with us on the average of eighteen months, we have about one school year to help make them emotionally stable, teach the three r's, and develop an awareness of personal hygiene.)

Most of these children are in need of recognition for things done well, so I initiated a reading program whereby people outside the classroom would know what they were doing. When a boy reached Book 2, he was given the honor of reading a story to another class. As often as he got a story ready, he could read it. It was understood that one could not read to a class unless one was thoroughly prepared. He had to know his story well enough to be able to answer any questions asked by the class. He had to have a little extra information. For instance, if he read about a diver, the reader had to have an idea of where the diving took place, what kind of equipment was used, about how far he could go down with the equipment being used, etc. I felt this was an easy and interesting way to help teach comprehension and, at the same time, to engender a desire for more knowledge.

I would never go to these reading sessions, but the boys would report when the session was over. Later in the day, I would check with the teacher as to the problems or lack of problems the boy may have encountered. This program built up tremendous confidence and a strong desire to read. For further recognition, we initiated our own newspaper. The boys wrote short stories about home and some of the things happening at the institution. So long as the boys wrote no derogatory statement about anyone, their articles were put in the paper just as they were written.

Because of physical and/or social handicaps, many children cannot hear or reproduce sounds correctly. (I define social handicaps as speech problems arising from homes where English is not the primary language spoken, or homes in which incorrect English is the pattern of speech.) It did not disturb me to know that they could not distinguish the difference between th and th, but I did endeavor to get them to hear and pronounce the difference between th and d, or d and b.

Since words are made up of syllables, we spent most of our time learning to put two or three sounds together and pronouncing them rather than concentrating on isolated sounds. For example, as soon as we learned the sounds æ and p, we practiced æp and pæ. We found that this method made it easier to make words like tæp or pæs, or larger words.

Comprehension began the first day of school. Our boys do not listen, therefore they cannot comprehend. I insist that when I talk they keep quiet and when one of them speaks, the rest of us listen. Without this form of courtesy, none of us would ever be able to understand each other. Emotionally disturbed children do understand this type of discipline and they do respond to it. Of course, this change does not occur overnight, but a gradual change can be seen.

In the beginning, only simple oral directions are given. Almost all directions must be repeated. Each new word must be understood; simple sentences and questions are formed. Slowly simple written directions are given. If there is comprehension, questions can be answered and directions followed. This was a tedious process, but the results were astonishing. They began to hear and comprehend what was said to them; therefore they learned more and faster.

i.t.a. makes comprehension much easier. When a child learns most of his sounds he can pronounce almost any word he sees. He realizes that these symbols represent words he has heard on TV or heard someone say. He is slowly beginning to see a reason for reading. If he can sound out a word he does not know, the meaning can be explained to him. This makes the teacher's job a little easier. More time can be spent on comprehension and less on pronunciation. The emotionally disturbed children with whom we work have tremendous difficulties in the area of comprehension. One can therefore see why they have difficulties in school.

Writing (other than the practice of symbols) for the class began with the dictation by me of one-, two-, and three-sound words. The more sounds they learned, the larger words they wanted for dictation. I was soon able to dictate short sentences. When they began to see they could write sentences, I asked them to make up some, write them, and read them to me. As the writing and reading progressed, they were able to write short stories built around the pictures in the workbooks. By April and May many were able to write short stories about TV programs.

Although no boy completed the entire i.t.a. program, transition to T.O. posed very few problems. After the first month in i.t.a., the class was allowed to take low-level books out of the library and our library consists of only T.O. books. To their delight, i.t.a. had already made it relatively easy to read in T.O. From this time on, I encouraged them to read anything they saw anywhere. At Easter our boys go home for a visit. When they returned, one boy told me proudly that he could now read the signs and posters in the subway; another said he was the only boy on his block who could read.

These children seem to take pleasure in belittling each other. The stronger child hurts the weaker one physically and the weaker one retaliates verbally if he is quick-witted or, if not, he withdraws in a corner. One of my first lectures in September and my last one in June is on this topic. In September, we are all dumb; we all have empty heads. As the year progresses we fill our heads with knowledge. Since all heads are empty, no one can laugh at another's ignorance. The only way we can learn is to help each other. These ideas (which seem new to our boys) go through a process similar to brainwashing daily.

At every opportunity I had weak boys helping the strong, strong boys helping the weak, weak boys helping weak boys and strong ones helping the strong. When we began learning sounds, words, and sentences, I was able to work with a small group or individuals while the remainder of the class helped each other.

I was amazed and happy at the change in behavior of the class as time went on. Boys were trying to read instead of fight; they walked around the room looking for books rather than to call each other names. They became a true group. If they were taken outside to play, no matter how many classes were in the same area, the class would remain together playing happily.

It was a genuine pleasure to teach i.t.a. The boys were happy because they were learning and the teacher was happy for the same reason. It was a happy year. The children learned to laugh (without malice) at themselves, each other, and at the teacher. The teacher did the same. I will never forget how we all laughed when I put the word "**nuemœnia**" on the board and a boy finally deciphered it. He jumped up and ran to the front of the room yelling the word and saying, excitedly, "That's the stuff Mr. Clean uses!!" When the class finally quieted me down and I tried to explain the difference between "pneumonia" and "ammonia", the same little boy wanted to know if he ever got pneumonia could he take ammonia to cure it. We did not get much lessons done that day!!

I sincerely believe that by the end of the school year, 90 percent of the class read for pleasure rather than because I told them to. As I stated before, no one completed the program, but all boys made progress. In June, the class was tested in i.t.a. and T.O. The results were most gratifying. In September the two lowest boys scored 0.8 on the California LPW Test. In June, one scored 2.4 and the other 3.5 on the California LPX.

The attitude toward learning had to have changed in order for these children to make so much progress. i.t.a. made it possible for them to see their own progress almost immediately. As one successful lesson led to another, they craved more and more knowledge. After all the years of failure, they could now read.

Finally, let me say that in working with emotionally disturbed children, I have tried to work under the premise that my class consists of my own children, that they belong, at the same time, to someone else to whom some day they must return, and they are emotionally disturbed.

If they are mine, I will laugh and play with them; I will get angry with them; I will lecture them when they have done something wrong, and compliment them when they do something right; I will not lie to them when I believe they can do better work; I will keep my word with them whether it's a reward or punishment; I will teach them how to comb their hair or fasten their pants, and maybe yell at them when they forget their pants and hair; I will talk to and with them as a class but will also find time to talk over individual problems alone.

At the beginning of the school year, I have to realize that I must accept these very immature children as they are, (dependent upon me), and try to make them independent individuals by the end of the year. I know complete independence cannot be achieved in that period of time, but if we work toward this goal some amount of success can be achieved. In this way, I am helping to build up that inner strength which they will need when they return home.

It has been my experience that most of these children need the type of discipline, structure and consistency and care mentioned previously and are more successful in their relations with others and in their lessons when they have them.

These ideas I cannot separate from the teaching of i.t.a. i.t.a. gives them a definite pattern to follow in order to learn to read. The teacher provides a pattern of behavior to follow. Combine the two and they create a stronger foundation on which the emotionally disturbed child may build a better future.

| | Traditional Orth. September | i.t.a. December | i.t.a. 6/1/66 | Traditional Orth. 6/2/66 |
|---|---|---|---|---|
| John | 0.8 | 1.6 | 3.3 | 2.4 |
| Henry | 1.8 | 2.0 | 3.2 | 2.2 |
| Robert | 1.6 | 1.7 | 2.6 | 1.9 |
| James | 1.9 | 2.7 | 3.3 | 3.6 |
| Kevin | 0.8 | 3.1 | 3.4 | 3.5 |
| Tony | 2.1 | 2.0 | 3.3 | 3.6 |
| Richard | 2.3 | 2.4 | 3.4 | 3.1 |
| Albert | 2.3 | 2.2 | 3.3 | 2.3 |
| Thomas | 2.3 | 2.6 | 3.3 | 3.3 |

## 4. USING THE I.T.A. WITH A GROUP OF FIRST GRADE DEAF CHILDREN AND ITS IMPLICATIONS IN RELATION TO READING SPEECH AND LANGUAGE

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As educators of the deaf seek new methods and new ideas in this "McLuhan Age", we are profoundly convinced that the needs of the hearing impaired child are unique. Learning tools and techniques that have proved successful with hearing children will seldom work effectively with the hearing impaired particularly during early levels of instruction when vocabulary and learning skills must be developed. Delgodo (1966) referring to this problem stated recently that:

> "...existing materials are generally so heavily dependent on auditory communication that the deaf child is cut off from all except the most obvious and concrete implications of the average presentation."

The broad understanding of language and its patterns that are assimilated almost unconsciously by the hearing child before he enters formal educational situations is non-existent in the hearing impaired. As a result, most teachers either modify existing materials or design their own to provide a background of understanding. The hearing impaired child requires many instructional sequences designed for him and him alone. A vital element of these materials is that of "consistency".

Dr. John Downing (1962), an authority in reading research, mentions that:

> "inconsistencies undermine confidence in the early stages of learning to read; due to inconsistency of visual patterns it necessarily follows that forming associations between patterns and meanings will present an added difficulty."

The skill of reading printed words has assumed the utmost importance in our educational system. How then does the deaf child master this skill in addition to the other communication skills - language, writing and speech?

Utilization of the Initial Teaching Alphabet with the young hearing impaired child enables him to learn to read, speak and write simultaneously. The i.t.a. approach to reading will advance the development of original language and speech which is the hearing impaired child's greatest area of deficiency. This approach to reading with the hearing impaired encompasses the three basic communication skills and contains the important elements, in the words of Dr. John Duffy (1966), "structure, simplicity and sequency of ideas".

The ordinary development of communication skills follows the sequence: language, speech, reading and writing. For those severely impaired in hearing, this sequence becomes distorted. In this new sequence, meaning is first attached to the visual symbol, then associated with the auditory impulse. The child is initially presented with the "consistent i.t.a. symbol to which he associates meaning visually, auditorially and as he articulates it, kinesthetically.

Sequence for Original Language

As individual symbols were presented and mastered by the child, they were blended into meaningful language.

**kee** appl **bœt**

The child was taught to "think in sounds" and associate them with the "unchanging" visual i.t.a. symbol. Increasingly motivated by his success in decoding these symbols into meaningful language, the child is encouraged to call on his own store of receptive language, which at this point becomes functional, and he is able to express his thoughts, first in writing and then orally. It is here that he is able to see the relationship between the visual symbol and the spoken word. Communication skills were learned in the following sequence: reading, language, writing and speech. Verbalism in print preceded verbalism in speech.

Truly, for the deaf child at age six to have the desire to express his thoughts in writing and to possess the tools with which to do so, is a tremendous accomplishment. Under ordinary circumstances, these children are not motivated to do so until much later due to lack of language and inability to spell the words.

Reading Text and Workbooks

The text and workbook became the guide for the language principles (formal language) to be presented. The formal language and vocabulary for each section was presented before the child was exposed to the text, the primary purpose being that he approach the text with confidence and not in any way encounter failure. Provisions were made for individual differences so that the child proceeded, at his own rate, with the text. The same procedure was followed with the workbooks; each child moved from one workbook to another at his own rate. Children related readily to the drills in vowel discrimination; many types are provided in an interesting format.

Within these materials, as well as within the teacher and the child reside huge powers for learning. The materials communicate with the child and meet his needs: children have sought rather than rejected them.

The Fitzgerald Key

All of the language teaching was done within the structure of the Fitzgerald Key - which is the special method of teaching language to the severely hearing impaired. By way of brief explanation, the method (at the lower level) categorizes vocabulary into the following sections: "Who" words referring to people; verbs; "what" words referring to nouns; "where" referring to places; such as, on the bus, in school etc., and "when" words referring to time.

The deaf child requires this structure in order to write a good grammatical sentence. Since he does not hear the spoken sentence, he must have strong guidelines. By using the Initial Teaching Alphabet in conjunction with the "Key" he will use the following procedure when reading and writing:

1. recall by visual memory the object (visual picture)
2. write it - by thinking in sounds and blending the sounds into words
3. correct sentence structure - within the framework of the Fitzgerald Key

4. read and associate meaning

5. say - using speech

The success and enthusiasm which has been experienced with this undertaking has led to a further step. After the transition has been made to traditional orthography, the Initial Teaching Alphabet will be retained as a means of teaching speech. The i.t.a. symbol will be marked over the traditional spelling.

ie œ au
find broke all

This will provide a consistent aid to which the child may refer when having difficulty with pronunciation. All classes will use this method of identifying a word in print with its related word in speech.

Is it not true that when one sets out to accomplish a specific goal that quite often many rewarding results are met by the way!

Today, with the wide variety and availability of new media and technology which has permeated all areas of our culture, should not we, teachers of the deaf, be the first as Marshall McLuhan states, "to enter the new age of education which is 'discovery' rather than 'instruction' -- we cannot do today's job with yesterday's tools!"

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## 5. UTILIZING PITMAN'S INITIAL TEACHING ALPHABET (I.T.A.) WITH INFANT DEAF CHILDREN

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In his book *Thinking Without Language* (Furth, 1966), Hans Furth makes the statement which he admits is speculative, that:

> "The deaf child fails to acquire language because: it is taught too late in an unreasonable medium in an unnatural way and by the wrong person".

Assuming that this statement is true, and overwhelming evidence supports it, we are faced with the following questions:

1. When should language and speech be taught to the hearing impaired child?

2. In what medium?

3. In what way?

4. By whom?

### When Should Language and Speech Be Taught?

The normal child with normal hearing starts learning to attach meaning to gross, signal, and speech sounds in his environment at a very early age. In fact, he starts during the first weeks of life.

The normal infant soon learns that the word "ball" and the round object which he sees and feels are related. Eventually, the word will not only remind him of the object but the sight of the object will remind him of the word. When this occurs (for many children this happens within the first year) he will be thinking with words. His vocal and articulatory skills acquired through vocal play and through the imitation of the sounds he makes and the sounds others make are now developed sufficiently to enable him to make the sounds he hears in his mind's "ear". He has larned to play a musical instrument (his speech mechanism) and he can now play it by "ear".

The hearing impaired child cannot learn to play his "speech instrument" by ear in the normal way. Furthermore, if he learns to communicate through gestures and facial expressions and to think in other than a verbal language system during his first three or four years of life his chances for acquiring good or even adequate verbal language and communication skills, especially acceptable speech, are very poor indeed.

With the establishment of a satisfactory non verbal method of communicating to others his needs and desires, along with the development of thinking processes which are independent of verbal language, the hearing impaired child lacks interest in verbal language and often finds it very difficult to learn. Often he resists the verbal language system being imposed upon him. For the above reasons many of these children become severe language cripples.

## When Taught?

As has been stated, the perception of speech, the development of verbal language and communication skills, including speech, reading, and writing, must begin for the hearing impaired child by the age of one year.

## In What Medium and In What Way?

Early discovery of the hearing impairment, early use of suitable hearing aids, one for each ear if both ears can benefit from amplification, and early skillful language stimulation and speech perception training are essential. Such training must be given by a competent therapist or teacher and by parents who have been properly trained. With such a program the child will learn to combine the speech sounds he hears through his hearing aids and the visual movements of the speaker's lips, teeth, tongue and face with the object or action the spoken word or words symbolize.

Eventually the child learns to think with these audio-visually perceived words. He will then think these words "aloud". His utterance may be far from accurate, but for him and his parents and therapist, it is speech.

When a working vocabulary of 25 to 50 or more words are perceived and when many of these words are in the category of "spoken" words the child should be capable of pointing to or handing the therapist or parent the object or a picture of the object when asked to do so. At this point, often around two years of age, the word for the object or action which is now in the child's vocabulary should be placed on a card with one inch sized letters using Pitman's Initial Teaching Alphabet (i.t.a.). (Duffy, 1966). The word being taught should be spelled phonetically, even if the spelling departs from the standard i.t.a. spelling for that word. (Sir James Pitman concurs with this change from standard i.t.a. spelling for this special utilization of i.t.a.).

For example, the common word door is "dor" in i.t.a. For the speech and hearing impaired child it would be spelled "**daur**" since that is closer to the sound we normally use in the word "door" than is the (o) as in the word "hot".

The child is now taught to associate the word with the object or action. He is called upon to match the word with the object or picture of the object or action, or to carry out the action symbolized by the word or words. For example, he would be shown the phrase "sit **daun**". He would say "sit down" and perform the action of sitting down.

For the next phase of training, individual sound letters in words are isolated and called to the child's attention. For example, the (a) in "appl". Since he knows the word and can say "a" and "pl" he easily learns to say "a" for the letter (a) and "pl" for the letters (pl). Other examples are "**oi**" for (**oi**) as in "**boi**"; "u" for the vowel in "sun".

By first learning to attach meaning to spoken audio-visual symbols (spoken words), then to visual written symbols, the child is now ready to learn to recognize the spoken audio-visual cues associated with individual speech sounds. These sounds are then associated with the i.t.a. written letter symbols. The sound symbol and the letter symbol are thus joined together.

In learning the names (sounds) of individual letters the child attempts through auditory, visual and kinesthetic cues to approximate the sounds made by the therapist or parent. Thus he starts the process of improving his ability to articulate sounds while he is developing his language ability, increasing his vocabulary, and learning other communication skills such as reading and writing. It is at this stage that the writing of individual letters, which can be blended into words, becomes the basis for an increased interest in writing, in reading, and in speaking. Through this process the foundation skills for language perception and expression are thus acquired and further enhanced through the interrelationships of reading, writing and speaking.

The method herein described makes it possible for the hearing impaired child to acquire language and verbal communication skills at an early age before a non verbal system of thinking becomes firmly established. It also allows for the more normal development of vocal and articulatory skills not found in the deaf child who learns to articulate speech sounds in a mechanical, monotonous manner at four or five years of age. Furthermore, the child does not suffer from a system of training where good articulation is subordinate to language development until speech habits are so firmly fixed that improvement in the articulation of speech sounds is very difficult if not impossible to achieve.

By Whom?

An intensive program of training as outlined above should be directed by competent professional workers starting when the child is between six months to one year of age. Hourly training sessions with the child and parent should be carried on several times per week during the first year of training when the youngster is between one and two years of age. Daily two hour training sessions of individual and group activity should be carried on when the child is between two and three years of age. This training must be accompanied by an imaginative, intensive, skillfully executed home program of training. By three years of age, daily three hour individual and group lessons should be provided. With such a program many hearing impaired children can, at the age of five or six, be assimilated successfully into the regular classroom where they can hear and imitate normal speech and can be encouraged to communicate in a more normal manner than would be possible in the comparatively poor language and speech environment of a school for the deaf.

The two professional groups now engaged in working with the hearing impaired infant are Speech and Hearing Therapists and Teachers of the Deaf. Competent workers from either group can carry out the program we have recommended.

Children who have been provided with suitable hearing aids and intensive language training starting at or before one year of age and who have then received early training in reading, writing and speech using Pitman's Initial Teaching Alphabet have developed language and speech ability to a degree far greater than was ever before thought possible, far greater than would normally be expected of such children using traditional "auditory training" techniques.

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## 6. THE INITIAL TEACHING ALPHABET AS AN ADJUNCT TO ARTICULATION THERAPY

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The normal child must cope socially and emotionally with new situations and challenges in order to take full advantage of the school learning experience. The youngster who enters school with an articulatory deficit will face additional obstacles in making this adjustment -- obstacles which may well retard his educational achievement as well as his social adjustment. It, therefore, would be highly desirable to provide these children with maximal opportunity to perfect their articulatory skills prior to school entrance. This point has been emphasized as being mandatory particularly in the management of culturally disadvantaged children. Raph (1967) recently stated that while children of disadvantaged minority groups have formerly not been brought to the attention of the psychologist or speech pathologist prior to entrance to school, once in school their language deficiencies have imposed a problem of such severity and magnitude as to render ineffective whatever special services the school might provide for dealing with their needs.

Approximately 7% of school age children exhibit problems of misarticulation. The highest incidence of this disorder occurs in children in the kindergarten and primary grades. There also appears to be a sharp increase in articulatory maturation during the first two school years. This observation has provided the rationale for the widely adhered-to policy of postponing early therapeutic management of young children with misarticulations. Consequently, it is quite common to find public school speech therapy programs giving low priority status to articulatory defective children in the kindergarten, first and second grades.

There has been some question as to why children increase in articulatory proficiency during the 7th and 8th year of life. Some writers have suggested that this improvement is the result of maturation of physiological and auditory skills. One area, however, that has not been subjected to study is the role of reading readiness training and early reading experiences in facilitating this articulatory maturation. It is conceivable that the auditory training and phonic orientation that the child receives during his introduction to reading are significant factors in explaining the increased momentum in his acquisition of mature articulation patterns.

It is the contention of this investigator that speech therapy approaches which rely primarily on the auditory channel as the main avenue of stimulation are relatively ineffective for the preschooler. The methods of remediation must be carefully formulated to best meet the needs and abilities of the child. A child with a speech disorder in the form of articulatory inadequacy is faced with various difficulties in modifying his inadequate speech pattern. He must, first of all, learn to produce correctly the phonemes of the language

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and then be knowledgeable in the proper placement of these sounds within words, sentences and finally general conversation. A child presenting a speech pattern of substituting the sound *t* in place of *k* must not only learn how to produce the proper phoneme, but must then know where and when to produce it. For example, the child producing the word *tat* for *cat* not only must learn to articulate *k* correctly but, in addition, must learn that it exists within a certain position of the word. Correct word production, therefore, would be dependent upon correct phoneme order as well as correct *k* articulation. Otherwise, the resulting verbal product could be the words *act* or *tack*. To learn these skills, the present techniques necessitate auditory training as the primary vehicle for speech modification. The value of the auditory avenue of stimulation, however, is not being minimized or questionned. Its effectiveness has been demonstrated, but its limitations growing out of the abstract quality inherent in auditory stimulation are obvious. Using only the auditory channel the child must take in phonemic information, store it within the central nervous system and be prepared to recall it appropriately when verbalizing. Some of this abstractness could be reduced if a set of visual symbols relating in a one-to-one fashion to the phonemic elements of speech easy for the preschooler to learn, were available. The unavailability of a set of visual-verbal symbols has limited the application of a truly multisensory approach to articulation training for preschool children. This lack of suitable visual symbols may also explain the basis for frequently delaying therapeutic management until the child has obtained some basic reading and phonic skills. The author feels that a phonemic-visual-oral approach could add a degree of concreteness that cannot be equalled in reinforcement value by any single sensory channel. Current articulation therapy approaches such as the program suggested by Van Riper (1963) rely heavily on the association of auditory and kinesthetic experiences. This pairing, however vital in the acquisition of normal speech, represents a complex of vague associations which many children are not capable of or have difficulty in adequately learning.

The relationship between articulation disorders and reading disabilities has frequently been reported. The findings of Monroe (1932), Eames (1950) and Jones (1951) and others have led to the general conclusions that there may be some common denominator between articulation problems and reading disabilities. The nature of this relationship is still undefined. It is generally agreed, however, that speech sound discrimination, auditory memory span, auditory acuity and vocal phonics are necessary components in the acquisition of both speech and reading skills. Experts in both speech pathology and reading indicate that deficiencies in these auditory functions may retard the development of either one or both modes of functioning. In strengthening either articulation or reading skills, one might logically predict an improvement in the other skill.

There seems to be sufficient theoretical and research evidence to justify an investigation of the effects of associating visual symbols with their phonemic correlates in articulation therapy. Traditional orthography with its irregularities and inconsistencies does not lend itself in relating phonemic events to visual symbols for young children. This inconsistent symbol system often promotes confusion in both the young child as well as the adult. A visual-symbol system which would relate in a one-to-one fashion to the phonemic elements of speech, avoiding spelling inconsistencies, while still closely correlating with traditional orthography would seem to be extremely valuable as a vehicle in articulation therapy. The Initial Teaching Alphabet seems to provide the basic ingredients for this type of articulation training approach. It is interesting to note, however, that although there has been a great deal of work carried out on the use of i.t.a. in many reading programs there has been no systematic incorporation of a phonemic alphabet of this type into speech therapy programs designed for preschool children with articulation errors.

An experimental program was devised by the author to demonstrate the feasibility of using i.t.a. symbols as an adjunct to traditional speech therapy procedures with preschool articulatory defective children. The initial focus of this program was on the development of an approach which would aid in strengthening the association between phonemic events and their visual and kinesthetic correlates. Such associations would then provide the articulatory defective child with a basis for the multisensory attack mode in the establishment of correct articulatory patterns. To test the efficacy of this phonemic visual-oral technique, the development of a rudimentary set of teaching materials was required. In order to test the appropriateness of these materials with preschool children, an experimental program extending from June, 1965 until February, 1966 was undertaken with eight normal children ranging in age from 3 years, 8 months to 5 years, 1 month. These children were seen in group sessions, meeting twice weekly for one hour periods. After five months in this program, the response of the children indicated that they were capable of rapidly learning the i.t.a. symbols and associating them with their phonemic correlates. Additionally, it was noted that these children exhibited an increase in analytic ability and greater precision in articulatory production. The experience obtained with these normal children and the material developed encouraged the investigator to utilize this type of program with preschool children with articulatory disorders.

The therapy materials developed for the experimental approach were designed to cover several major areas of training. They are auditory discrimination, visual discrimination, sound sequencing, phonemic synthesis and phonemic analysis. The program commences with the presentation of a single sound and the corresponding i.t.a. symbol and progresses systematically through all the symbols. Synthesis of the elements into syllables, words, sentences and stories is, therefore, carefully structured. The program is graded in difficulty so that the materials are presented in a controlled manner allowing the child to start at a level at which he can function successfully progressing through more and more difficult stages. New materials and sounds are programmed into the lessons at the rate at which the child can learn and incorporate the sounds. Basically, the child is trained to be aware of the function of phonemes within speech so that they can analyze and synthesize these sounds properly into his general conversational speech. The visual modality incorporating i.t.a. symbols serves as the major form of stimulation used to facilitate this training.

In a second pilot investigation an attempt was made to test this program on four and five year old children with articulatory disorders. In October, 1966, a therapy program funded by the U.S. Office of Education under Grant No. OE-G2-32-52-0450-6011 was initiated. A total of 24 children were included: 12 children were given the experimental approach (phonemic-visual-oral technique via i.t.a.) and the other group of 12 children received a traditional articulation therapy program. The experimental approach incorporating i.t.a. was structured in such a manner that the children were trained to recognize and produce all the major phonemes in our language. Both vowel and non-defective consonant training was conducted in this program. The control approach, on the other hand, represented a training regimen similar to the program outlined by Charles Van Riper (1963). The primary emphasis of this therapy was on the utilization of the auditory and kinesthetic channels for modifying incorrect articulatory patterns and establishing new ones. This program, however, was only concerned with those consonant sounds which were defective.

The experimental and control group were exposed to 55 sessions, representing approximately 27 weeks of therapy. Upon investigation of the data collected, the following results were obtained:

a. A greater degree of articulation improvement as measured by performance on the Goldman-Fristoe Filmstrip Articulation Test (1966) was observed in the experimental group. In Table 1 it can be seen when pre-therapy test results were compared with the most recent measurements, the children in the phonemic-visual-oral program showed a mean reduction of 25.58 articulatory errors while the control group only corrected 16.3 errors during the same therapy period. (The number was computed on the basis of phoneme and position in words -- for example, the defective production of the *k* phoneme in initial, medial and final positions would count as three articulatory errors.) When the difference between these two means was subjected to statistical analysis, the discrepancy was found to be significant at the 5% level of confidence. It is also interesting to note that when the children with moderate articulation problems in both groups were compared, the experimental group modified more than twice the number of errors than the control group. The same trend was observed in the severe articulatory defective group but only a mean difference of seven errors was observed (see Table 1).

b. The children in the experimental group learned the visual symbols and related them to their phonemic kinesthetic correlates with great speed and facility. They became consistent in articulating correct phonemes in word and sentence context when stimulated by the visual symbols.

c. Greater interest on the part of the children was observed in response to the experimental program. This interest was manifested by a higher degree of regularity of attendance and responsiveness within the group sessions. The children in the experimental group exhibited longer attention spans and minimal occurances of hyperactivity and distractability.

d. The parents of the experimental children demonstrated greater interest and consistency in carrying out the assignments in the home program.

e. The experimental approach seemed to provide a more effective means of adequately providing articulation therapy for young children.

It must be pointed out that this experimental, multisensory training approach seemed to provide a greater degree of concreteness to the articulation retraining program. The children who learned the i.t.a. did not have to rely upon the abstract abilities of auditory memory and auditory discrimination in order to produce or reproduce the proper phonemes in the appropriate sequential order. The visual components that the children now acquired provided them with a more concrete method of analysis for speech production.

In conclusion, the value of the Initial Teaching Alphabet, as a symbol system to be incorporated into speech therapy, seems most promising. Specifically, the application of a visual-sound-symbol system which bears a one-to-one relationship with the phonemic elements of speech should aid the speech pathologist in articulation training, particularly with preschool children. If young children can be given the opportunity to learn or relearn sounds which have consistent visual correlates, the process of speech therapy would be greatly facilitated.

TABLE 1

MEAN REDUCTION IN ARTICULATION ERRORS AS OBSERVED IN THE CHILDREN UNDERGOING ITA AND TRADITIONAL THERAPEUTIC PROCEDURES

| Group | Mean Reduction | Standard Deviation | *t* |
|---|---|---|---|
| Severe Articulatory Defectives | | | |
| i.t.a. | 30.83 | | |
| traditional | 23.40 | | |
| Moderate Articulatory Defectives | | | |
| i.t.a. | 20.33 | | |
| traditional | 9.20 | | |
| Moderate and Severe Combined | | | |
| i.t.a. | 25.58 | 10.92 | 2.20* |
| traditional | 16.30 | 7.94 | |

* Significant at the 5% level of confidence.

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## C. REMEDIAL READING

This series of papers deals with the use of i.t.a. with children who have previously experienced failure in learning to read with our traditional alphabet. As is true of most of the written material dealing with the use of i.t.a. in a remedial setting, the papers attached tend to be non-experimentally based. They are based upon the extensive experience of the writers using i.t.a. in a remedial setting.

The reader interested in remedial use with i.t.a. should review the other subsections in these proceedings dealing with adult remedial reading as well as the papers in the section dealing with the exceptional child. Frequently, writers in this field argue that special materials and perhaps special methods are needed for remedial readers for the use of i.t.a. *The i.t.a. Foundation Report* includes a catalog of available i.t.a. materials. Within this catalog, the section dealing with supplementary reading materials has been rated with regard to the difficulty level of the books listed. This rating indicates whether or not the Foundation believes that the particular text is suitable for use in a remedial program. Usually, it reflects the difficulty level of the book as well as the age-interest level of the content.

The paper in this section by Dr. Marvin Baker deals with a series of general suggestions for proceeding with a remedial reading program using the Initial Teaching Alphabet. Mr. Raymond Laurita similarly presents a series of general considerations, theory, and a relatively detailed procedure for the teacher interested in the use of i.t.a. in a remedial class. Miss Rita McNerney reports the results of a successful study using i.t.a. in the Bethlehem Area School system. It should be noted, however, that her study does not make use of a control group.

The interested reader may wish to pursue some of the articles dealing with remedial reading presented in the bibliography below.

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## 1. INDIVIDUALIZED TEACHING ACCOMPLISHED IN REMEDIAL READING

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In the days of the 1960's there went out another decree that all citizens six years of age and above should be able to read. All were to be measured by standardized tests at prescribed intervals.

And lo, certain individuals exceeded the expectations of the experts and they were highly praised. Behold, the great majority achieved the desired scores and were accepted into full citizenship. However, there were a few which numbered into the millions who could not master the intricacies of the printed page and they were doomed and cast aside as failures. They were to be ignored, punished, or given much additional work of the same kind which they had so greatly failed.

The additional work resulted in additional failure; additional failure resulted in lack of initiative; lack of initiative resulted in further castigation. Finally, these poor failing persons concluded that they were without worth and quit trying altogether. Then those more fortunate and successful ones seemed to agree that these poor failing persons were of no worth and they quit trying to help too.

In such a situation as this there has come help and hope through the use of the initial teaching alphabet for those who have failed. With i.t.a. we can see the possibility of individualized teaching *for* and *by* remedial readers. The topic of this paper is INDIVIDUALIZED TEACHING ACCOMPLISHED IN REMEDIAL READING.

It may be difficult at first consideration to imagine how these individuals who have had such intense problems with the reading process can teach themselves and literally lift themselves out of their dilemma, but it is being done.

A program of self-help has evolved from three years of research and development. It is not a panacea for the profession, but one high school senior evaluated it this way. "I can read now all by myself. The stuff I'm reading may not be the greatest, but at least *I'm* reading it."

The first step in starting this individualized reading instruction is to help the student become aware of sound and its relationship to reading. A high school junior after two weeks in i.t.a. nerved up to admit that he had not known there was any connection between sounds and words which he was reading until he had started the i.t.a. program. This concept may be stated as reading is talk written down.

Time should be spent in "just talking" until the students realize that they already have command of one of the components of reading -- words. They need only to learn to recognize the printed symbols which are used to represent these sounds which they have been using and they will be able to read.

After this relationship is established, and the student becomes sound conscious, it is essential to learn what sounds and sound-symbols he already knows. This diagnostic exercise which is to be given is primarily for the student's benefit - not ours. He will be discovering what he really needs to work on to improve his awareness for sound and then for reading. This has relevancy and immediacy for him. Now we are ready to administer the SOUND RECOGNITION INVENTORY. This inventory checks or identifies the student's ability to recognize each of the sounds associated with the forty-four symbols in each position which it may be found - initial, medial, or final. After the inventory is completed the student has his own Sound Recognition Profile for constant reference.

This profile is referred to as each symbol is introduced. By checking his profile he learns how much of a problem a particular sound is for him. He then will gauge his attention to the presentation accordingly. Can you depend on him? Will he goof off? If you have laid the proper ground work and shown the consistency of the sound-symbols of i.t.a., it will work. When he realizes that it really pays to learn the sound-symbol association and he can depend upon the facts given attending is not such a great problem. He is now master of his own fate. For many students this is the first time they see that they have any control of this whole process.

The next step is the systematic presentation of the symbols. The speed with which they are presented is determined by the individual or group with which you are working. If you are willing to really get out of the way and let the student individualize his program, tapes are available for the presentation of each of the sound-symbols. He will be able to do an entire lesson without the help of the teacher. The testing is even included on the tape so an immediate feed-back of his ability to recognize the symbol under discussion is available to the student. If he needs further help he can repeat the lesson as many times as necessary. After he is certain of the sound, he prepares his vocabulary list. The list must include words which contain the sound presented in the lesson. The word list he prepares usually differs greatly from the limited vocabulary list found for remedial readers.

After this individual study-learning time, it is advisable to inject some group activity. Variety is the spice of teaching too. From the word lists which each individual prepared the teacher guides the class discussion so that each student has an opportunity and a reason for using his word. Having him use it in a sentence instead of just saying the word or telling what it means provides an opportunity for the other members of the group to rely on contextual clues.

These remedial readers have strong feelings about words. Why not explain the differences between denotation and connotation? They'll grasp the difference and be enriched in the process, because you cannot fully comprehend the differences without using the dictionary. Provide a copy for each member of the class. Look up familiar words -- words which they can find easily. When one finds it have him tell the group the page number. Don't waste time waiting for all of them to learn the alphabet now. They will be amazed at what they read about familiar words. You might use *run* as an example. One of the junior high students remarked that he didn't know you could run so many different ways. After this discussion it is time to return to the individual work again. Let them read.

This is one of the most crucial points of the entire program. Give them plenty of materials and let them read. They learn to read by reading. The fewer duplications at the beginning the better for this forces them to read independently. After they have read awhile, give them a chance to share what they have been reading. This gives them a motive for reading carefully. It also gives them a chance to glean from many sources instead of their limited reading. Don't forget to read something to share also. It would be shocking if these remedial readers read more than the teacher, but then maybe a shock is in store for all of us if we give them a second chance and let them set the pace through individualized teaching. Some have accomplished it - especially for remedial readers - with i.t.a.

## 2. SOME OBSERVATIONS CONCERNING I.T.A. AS AN IMPROVED APPROACH TO REMEDIAL READING THERAPY

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It has become increasingly obvious to those in education that with the introduction of i.t.a. and its rapid acceptance by so many at all levels of the educational spectrum, a valuable new tool has been added to the arsenal of weapons for use in the introduction of reading skills to the novice reader. The values of i.t.a. as a logical and simplified approach to the unlocking of the printed word are daily gaining widespread acceptance. At the same time, many in education have realized the great potential of the initial teaching alphabet for use with the mentally retarded, the deaf, the emotionally disturbed and most importantly, with that vast segment of the populace generally classified as disabled readers.

This latter group, and their numbers include millions of children and adults, will be the principal concern here for they constitute both a challenge for education and a threat to society. A challenge, for education has failed up to the present time to find adequate means of teaching these unfortunates the basic skill essential in a world that demands, as a minimum, the ability to read the printed word. A threat to society also, for this ever increasing body of deprived individuals is most certainly a contributory factor in the violent manifestations of anger increasingly evident in the land.

After working with i.t.a. for the past three years with hundreds of disabled children, it has become manifest that this instrument has built into it every possible facet of pedogogical methodology needed to provide success with the disabled child if applied skillfully and over a sufficient period.

To begin with, i.t.a. offers teachers an element lacking heretofore yet which has been the dream of all those who have worked with the disabled.

i.t.a. allows for the regularization of language so the learner may observe consistently the direct relationship between the visual, auditory and kinesthetic aspects of language. It offers teachers of reading the possibility of maintaining a consistently logical relationship between the decoding and the encoding process because of the auditory, visual and kinesthetic regularity present in the medium.

The initial teaching alphabet is in fact a total approach to language enabling the learner to co-ordinate all the sensory modalities available to him in the reading act. Bannatyne (p. 8)[1] has written:

> "The educational techniques appropriate for training these children (retarded readers) are many and varied. Children with visuo-spatial deficiency must be trained with spatial techniques, reinforced with appropriate linguistic experience through the neuro-sensory channels which are in tact. A child with poor auditory discrimination needs to be *taught* to listen and speak accurately, and a child with motor, kinesthetic or even tactile disabilities must have these trained while full use is being made of all the other input systems."

i.t.a. is the best instrument yet conceived for the simultaneous utilization of the various sensory input systems.

In attempting to discover what methods are most useful for the disabled reader, it is necessary to have a clear understanding of the problems involved in learning to read. Smith and Dechant (p. 28)[19] provided a most satisfying definition when they wrote, "Reading is the perception of graphic symbols. It is the process of relating graphic symbols to the reader's fund of experience." They further differentiate between two significant aspects of the reading process which continue to divide those concerned with reading for they invariably separate them into opposing camps. In discussing whether a particular skill is basic or not they pose the question, "Does it function primarily in 'learning to read' rather than in 'reading to learn'? It is not until the fourth grade level that 'reading to learn' begins to replace 'learning to read'." (p. 184).

The significance of this statement is basic to a resolution of arguments concerning methodology for it places method in its true perspective. The emphasis in the early years of reading instruction has too often been placed upon "reading to learn" before the learner has achieved sufficient ability in the areas of "learning to read." The methodologies used to instruct children in the reading act have been predominantly concerned with meaning before arriving at a state of certitude that the learner had the capacity to accurately decode what was printed on a page.

The role that mental maturity plays in the development of reading skills appears to have been misunderstood. A child cannot begin to associate consistent meaning with a word, a sentence, or a paragraph until he has not only the ability to decipher what graphic symbols say but also to perform this action with a high degree of facility and linguistic sophistication. Without these capacities he cannot understand the nuances of language which govern the proper use of pause, intonation, emphasis, phrasing and emotional involvement with whatever is being read. Until these abilities are fully operative the intelligence of the learner cannot be fully utilized.

In this respect the problems of the novice reader and the remedial reader are very similar for they are for all intents and purposes at the same stage of development in that neither has an adequate understanding of the structure and system that exists in language so they can aggressively attack it with confidence and facility. As long as this skill is absent, attempts at teaching the so-called comprehension skills are in fact useless. A child or adult who cannot decode a given passage with facility and accuracy cannot begin to develop the more advanced reading skills of inference, interpretation, characterization, empathy, integration, etc.

The definition of reading as the perception of graphic symbols for the purpose of relating them to the reader's fund of experience is indeed most useful for those concerned with instructing both the novice and the disabled reader for "It is through perception that the graphic symbol achieves meaning." (p. 28)[19] Thus it appears the key to the teaching of reading initially lies in enabling the learner to perceive graphic symbols accurately and consistently so the "mediating processes" mentioned by Hebb (p. 182)[11] as being present in every perception and necessary for an adequate response, may be set up in preparation for a meaningful response to the stimulus provided in the perception.

In comparing the needs of the initial reader and the disabled reader there is also another similarity aside from their apparent inability to perceive accurately. If one uses a yardstick for arriving at a state of readiness that measure most often adhered to, the mental age of the individual learner, there appears to be a vast gulf between the two classifications of readers. But if one attends to the more recent findings of researchers in the area of readiness, the difference between the two is considerably narrowed and may in fact disappear.

The studies of Harrington and Durrell[10] indicate the abilities of auditory and visual discrimination of word elements appear to be much more closely related to the development of reading vocabularies than does exclusive use of mental age as a criterion. Nicholson (p. 24)[16] has also written:

> "High mental age does not assure a high learning rate in beginning reading. Although children with very high mental ages have better letter knowledge it is apparently the letter knowledge rather than the mental age which produces the high learning rate."

Sister Nila[17] in discussing factors related to reading readiness ranked them as auditory discrimination, visual discrimination, range of information and mental age, in that order.

And Durkin in discussing significant factors in two recent studies of early readers indicated a strong relationship between early reading and identification of individual letters of the alphabet. She wrote (p. 137)[5]:

> "Research findings indicated that for more than half of the early readers in California, and again in New York, interest in learning to print developed prior to, or simultaneous with, an interest in learning to read. In fact, for some early readers, ability to read seemed almost like a by-product of ability to print and spell. For these 'pencil and paper kids', the learning sequence moved from (a) scribbling and drawing, to (b) copying objects and letters of the alphabet, to (c) questions about spelling, to (d) ability to read."

The evidence that educators have been remiss in their interpretation of research is becoming more apparent each year. The findings of Hebb[12] for instance, indicate that the practice of initially developing sight vocabularies still almost universally used as the best method of initial reading instruction, based upon evidence supplied mainly by Cattell[4] in 1885, is certainly less than definitive and conclusive. There appears the distinct possibility that contrary to the widely held beliefs of most reading educators, exposure to whole configurations without positive assurance that the learner has adequate facility with the individual components of the alphabet, may in fact be precisely the wrong first step to initial reading instruction.

Frostig has written (p. 50)[8] in discussing the ability of the learner to perceive spatial relationships,

> "The fact that the different parts perceived in relation to each other are not actually perceived simultaneously but in temporal sequence and integrated step-by-step into the total picture seems significant in training the ability to perceive spatial relationships. A sequence of eye move-ments is involved in the perception of even the simplest geometric figures. This sequential integrating process, which is sometimes referred to as pattern vision, is usually so swift that the perceiver seems to experience all the steps simultaneously."

And Olson (p. 36)[18] also writes,

> "All findings are consistent with the conclusion that early teaching of letter names and of various aspects of phonics is essential to rapid progress in reading. There is no support for the assumptions that a sight vocabulary of 75 words should be established before word analysis instruction is given or that a mental age of seven is necessary for the use of phonics."

It may well be that the cause of widespread reading difficulty evident may be directly related to the teaching of whole configurations before the child is perceptually prepared for this most complex of experiences. The resulting confusion would readily explain the persistence of reading difficulties long after a state of physical, mental and perceptual readiness has been reached. Hebb has advanced the theory that perception isn't immediate at all but proceeds instead in very minute steps and in a gradual and accumulating manner. He refers to the process as "serial apprehension" (p. 33)[12] and that each perception that has become immediate to the mature individual has become so only as the result of a long and complex learning process. His findings tend to support the research already cited indicating that it is the ability to perceive and identify individual auditory and visual elements with facility that is in reality the key to reading success.

It appears reasonable to assume that if the reader cannot perceive component elements accurately or if he is exposed to perceptions which are unclear and thus confusing, the result will be unsuitable and confusing associations and the consequent inadequate development of auditory and visual discrimination abilities. Add to this the learner's inability to profit from kinesthetic experiences directly related to his visual and auditory learnings and the development of disabled, confused children and adults is clear.

The developmental process of reading retardation may be described as proceeding thusly:

1. Initial unclear perception of individual letter components.

2. Retarded development of consistent associations with either wholes or parts.

3. Faulty development of auditory and visual discrimination capabilities.

4. Lack of development of associative meanings with either individual elements or whole configurations.

5. Development of negative inhibitory feelings toward language experiences.
6. Resistance to instruction.
7. Consequent lack of normal motivation.
8. Increasing confusion with continued exposure to language.
9. Continued failure to learn.
10. Development of guilt feelings due to failure to learn.
11. Reinforcement of negative learning experiences with continued exposure.
12. Eventual stoppage of learning.

If we can accept the classification of developing reading skills as first "learning to read" followed by "reading to learn," then the problems of most disabled readers appear in a new light. Their problems can be viewed in the perspective of having arisen from an inhibited development of necessary skills which in turn prevented them from learning to decode with accuracy and facility so they could make the transition from the "learning to read" type of reader to the individual who is "reading to learn." In short these individuals never advanced to the proper associative stages of reading because of inhibited development of auditory and visual discrimination capacities.

It has been my experience that the mass of reading problems treated over the past ten years were those suffering from this retarded development of decoding skills, especially in the areas of discrimination and association. There have been some individuals who exhibited great facility with graphic symbols and word attack but who failed to profit from their reading because of a lack of understanding of the materials read.

This group tend to fall generally into three categories, all of whom appear to have developed decoding facility because of unusually well developed abilities in the areas of visual perception, discrimination and memory. In the first category were children who were simply lacking necessary intelligence and consequently not capable of operating at levels much above where they were functioning. Their ability to decode was a misleading factor, directing their teachers to expect more of these children than they were actually capable of giving. The second category was composed of children experientially deprived or lacking in sufficient background to enable them to derive full benefit from instruction; and the third category were the result of inadequate teaching at the earliest levels, leading to the development of inferior reading habits. These three categories of individuals, though not strictly disabled in the sense considered to be common to most reading disabilities, are disabled none the less and need and deserve help. These children, as a rule, respond admirably to vigorous teaching directed toward assisting them overcome the effects of their handicaps.

The individuals under consideration as disabled readers here, are those who have failed to learn to read because of their inability to profit from instruction because of difficulty in the areas of auditory, visual and kinesthetic perception. These non-learning individuals constitute the vast majority of disabled readers. They become incapacitated because of failure to cope with the problems involved in perceiving "gestalt," either visually, aurally, kinesthetically or in combination.

Thus the problem resolves itself into one of teaching the learner how to perceive adequately for as Weiner[20] has demonstrated, it is through experience that individuals actually *learn* how to perceive. Once again it seems logical to assume that the more experience provided the learner concerning the nature and structure of language, the more opportunity he will have to develop accuracy and facility in decoding and consequently the more rapid will be his transition to a "reading to learn" type of reader. Ittelson and Kilpatrick (p. 55)[13] have made this statement concerning experience and perceptual accuracy:

> "When we have a great deal of relevant and consistent experience to relate to stimulus patterns, the probability of success of our prediction (perception) as a guide to action is extremely high, and we tend to have a feeling of surety. When our experience is limited or inconsistent, the reverse holds true."

Bruner (p. 148)[3] has also indicated the need for experience based on systematic practice to aid the learner in developing perceptual readiness. He writes of the need for "...the construction of a set of organized categories in terms of which stimulus inputs may be sorted, given identity, and given more elaborated, connotative meaning." He adds, "Perceptual readiness refers to the relative accessibility of categories to afferent stimulus inputs. The more accessible a category, the less the stimulus input required for it to be sorted in terms of the category."

Up to the present time the most successful methods of treating the disabled have been those which tended to artificially categorize language into a more regular system so the learner could more readily observe the logic underlying the structure of the language, with the consequent development of facility in decoding. Once the learner has arrived at the stage of development whereby he has fluent and accurate recognition of the graphic symbols appearing on the printed page, the process of associating consistent meaning with these symbols can progress and the learner has the capacity then, if properly motivated, to learn vicariously and independent of the teacher through the medium of the printed word, as indeed all who have attended school have learned.

The problem of the child who cannot read is the most frustrating imagineable for he is subjected,by force if necessary, to an educational system which is developmental in nature in that each learning experience is more or less built upon necessary prior learnings. Once he has fallen off the developmental ladder because he cannot keep pace with the increasingly complex reading tasks, he is effectively shut off from most of the educational life of the school. He must find his own motivation through what he can learn by listening and watching others learn without the assistance of printed materials. For most children, this experience is too difficult and emotionally shattering as their self-concept is consistently and effectively destroyed by every day failure.

Up to this time the systems found most useful in regularizing language have been the highly phonic methods such as that developed by Gillingham,[9] the linguistic approach, most often associated with Bloomfield and Barnhart,[2] and Fries,[7] and the multi-sensory techniques such as those popularized by Fernald,[6] and Johnson,[14] which utilized a variety of sensory modes in assisting the learner to develop reading independence. All these approaches have long since proven their usefulness in the rehabilitation of disabled children and adults.

However, with the advent of i.t.a., these methods have received an infusion of life that should make them far more effective and more far reaching in their use than has been the case to now. The problem is one of adaptation, of renewal, for educators now have at their disposal the missing ingredient from all these approaches. Present at last is the opportunity of structuring language just as carefully as did Gillingham, and Bloomfield and Barnhart; present now is the opportunity of utilizing a multi-sensory approach as Fernald and Johnson advocated, and at the same time bring with it the heretofore missing elements of (1) a consistent one to one relationship between sound and symbol, (2) the freedom to encode simultaneously as the decoding process is being learned, and most importantly and significantly, (3) the opportunity to allow the learner to use language structures which have a real relationship with his habitual speech patterns. The materials developed in prior attempts at structuring were inevitably lessened in their effectiveness by the need to use language that was in most cases stilted and divorced from the reality of the learner's own language background.

This internal factor present in i.t.a. is perhaps of equal importance with its consistent sound relationship and is very often overlooked by educators seeking explanations for the success of i.t.a. One of the essential needs in developing fruitful learning situations is the requirement that the learner provide himself with internal motivation. Parents and teachers must help in the motivation process; they must often continue establishing artificial motivation for the less capable, less secure and inhibited child. But for real success to occur in the education process, motivation must at some point come from within and must be self-sustaining. The child must begin to feel the very real satisfactions that come from achieving, both in his own eyes and in the eyes of his parents and peers.

When this state is reached, education becomes an ideal relationship between the teacher and the learner. The child, as he develops confidence and maturity, becomes capable of weighing what has been taught and what he knows to be true from his own experience, integrating what is useful and meaningful into his fund of knowledge. Once the child develops an understanding of the relationships that exist between the spoken word, the printed word and his own unique ability to express what he thinks and feels in a regular language system, the ingredients for self-motivation are immeasurably enhanced. i.t.a. is the first language system developed on a practical scale that makes this capability available not only to the linguistically advantaged but also to the less gifted child who needs a greater degree of structure and regularity before he is able to observe the logic and system of language.

The opportunities for rehabilitating the disabled reader offered by this approach are limitless for it has within it a component lacking in the traditional alphabet. For the first time, the entire development of language skills can be recapitulated in a fraction of the time formerly needed. i.t.a. is in fact a kind of linguistic microcosm and it is possible by using a structured and systematic approach, to present the confused learner with the entire development of linguistic structure in encapsulated form. The disabled child can be taken from the very first stages of the reading act quickly to the point where he initially encountered difficulty and then rehabilitated by developing the lacking skills and reinstituting progress. Once the blockage has been remedied, the development of the skills necessary for learning the more mature reading functions can proceed, for the disabled individual is being exposed to a system which is consistent, logical, self-motivating and highly compatible with the traditional alphabet.

Not only is movement reinstituted from the original point of difficulty, it proceeds with rapidity with the learner's improved ability to decode independently, which in turn provides the necessary motivation for continuing success. Once the technique of associating a single sound with a symbol and then blending these symbols into meaningful configurations has been mastered, the learner gains new confidence with each response to stimuli for he constantly reinforces what has already been learned. He develops the perceptual and discrimination skills needed for correct viewing and hearing of the remarkably consistent structure that exists in the English language for those who have passed over the initial stages to the point where their auditory, visual and kinesthetic memories are functioning normally and allowing them to work with polysyllables.

i.t.a. offers the teacher an almost ideal learning situation for the establishment of profitable stimulus-response activity with meaningful materials. A significant problem with disabled readers is their inability to overcome prior, faulty S-R activity in the learning of inaccurate configurations. The number and variety of these confused configurations is infinite and the interested can easily compile a large list of them on his own or seek out one of the lists compiled by researchers in the past. (Laurita)[15] i.t.a. is extremely useful for it provides a truly effective weapon in fighting the problem for it, in effect, sets up a new S-R activity in which the learner develops improved facility with and attention to, the individual elements of words enabling him to correct his past inattention to details and replace it with an improved ability to notice and respond to distinguishing characteristics.

Another great advantage of i.t.a. and one not as yet mentioned is the built-in capacity of the initial teaching alphabet to assist in establishing improved habits in the area of directionality. An almost universal symptom of the disabled reader is his inferior directional ability as manifested by his numerous reversals, additions, ommissions, poorly developed return sweep, and frequent losses of place. Without attempting to discuss here the underlying causation of confused laterality, it can be stated that i.t.a. is a most pragmatic tool, for it has proven itself a remarkable aid in improving directionality with regard to language symbols.

The fact that this new medium literally forces the learner to respond in a multi-sensory manner to the left-right flow of language almost always causes improved directional skill. The necessity on the part of the learner to respond visually and aurally, letter-by-letter, to the individual elements of each configuration, and the development of the capacity to encode the fruit of these perceptions by printing the symbols in a consistent left-right manner, provides strong motivation for improved understanding of the need for a consistently left-right orientation in dealing with language. Once again, as a new S-R activity becomes reinforced with consistent success, the elements necessary for improved motivation and independence are present.

In short, i.t.a. provides the teacher of the disabled with a many faceted attack, for the alphabet's consistency enables continual reinforcement of improving perception, discrimination, association, and directionality; it also stimulates the co-ordination of learning through the visual, auditory and kinesthetic areas and at the same time assists the learner in developing improved motivation and an independent attack on language. There does not appear to be a single valid argument sufficiently strong to prevent any teacher of the disabled from using i.t.a. as a tool with his students.

While using i.t.a. over the years a number of approaches have been tried and evaluated in an attempt to discover a teaching method which would make maximum use of i.t.a. as a remedial tool. The remedial teacher working with the disabled who have not mastered, with facility, the decoding skills, soon discovers that the problems of most learners revolve around the development of mastery of the vowels. Until the learner develops an understanding of the various manifestations of sound possible with vowels, his ability to attack even the simplest of configurations is inhibited. The natural after effect of this ineffectiveness with simple configurations is inhibition and eventual stoppage in the accumulation of skills which would unlock the more complex polysyllables.

If the learner cannot perceive the structure present in the configuration "hat", if he cannot hear and visually associate a consistent sound and letter name with the initial, medial and final elements, his ability to profit from advanced instruction in phonics and word attack skills is effectively stifled. Thus the initial problem of the remedial teacher continues to be, as it has for past generations, the need to find methods for improving the learner's perceptual, discrimination and memory abilities simultaneous with the development of an understanding of the nature and function of the consonants and vowels, so correct associations can be constantly made and learned.

Most remedial teachers will agree that the initial development of adequate word attack skills necessitates, first, the learning of a number of consonant sounds, followed by vowels and finally the ability to combine these consonants and vowels into meaningful units, in short a synthetic attack to language development. Most remedial teachers will likewise agree that the teaching of individual consonant sounds is not an especially difficult task due to their great consistency and the presence of numerous concrete objects beginning with consonant sounds to aid in the associative process. Learning consonant sounds is generally a matter of patience in applying consistent help, and the giving of meaningful practice in the blending of these sounds with vowels into recognizeable configurations.

Vowels are the great roadblock for most children, especially linguistically untalented and inhibited children, who find it difficult to understand the fact that the same individual vowel letter has a variety of sounds and may appear in numerous and varied positions within words. Until they are able to arrive at an understanding of this linguistic peculiarity, they are unable to develop satisfactory auditory and visual associative and discrimination abilities.

Up to the present, it has been necessary to teach vowel sounds by emphasizing the consistent sound made in various similar configurations such as rat, sat, and hat. After the child became proficient at this recognition of similarities, the teacher attempted to demonstrate the relationship between these configurations and similar words with differing initial and final consonants such as rap, has and sad. In effect the teacher attempted to improve the learner's ability to recognize the medial vowel sound by using it in a consistent position with known consonants; and at the same time improve the learner's capacity to perceive visual and auditory gestalt.

Admittedly learning by observing similarities is one very useful method but it is certainly not the only way, or perhaps even the best way when learning language. We also learn by being able to observe and compare differences. Because of the nature of our language and the peculiarities of our orthographic system we have never been able to successfully teach the various sounds of the vowel simultaneously. Their differences couldn't be indicated in a meaningful way because the spellings of words using the varied sounds of the same vowel were too numerous to be anything but confusing if taught together, especially to the disabled child.

However, with the advent of i.t.a., teachers are provided with a major breakthrough in simplifying the teaching of the vowel letters. There is now a medium available which allows more than one form of the same vowel to be taught simultaneously, for the purpose of clarifying the variations of sound associated with a single vowel symbol in T.O. Add to this the opportunity of permitting the learner to receive almost immediate kinesthetic reinforcing practice in learning auditory and visual perception, discrimination and association of all the elements appearing in a configuration in their normal left-right orientation.

The remainder of this paper will be devoted to a brief exposition of a systematic remedial method that has evolved over the years which has proven extremely useful in treating all gradations of disability. The initial and most innovative step is the division of the vowels into compatible pairs for the purpose of allowing the learner to understand the function of the vowel by better utilizing his ability to learn by means of similarities and differences, by means of synthesis and analysis, by means of comparison and contrast.

The initial step in this method is very traditional for it involves the learning of a number of single consonant sounds such as *p*, *s*, *t*, *f*, *r*, *l*, *m*, *h*, *c*, and *g*. Any procedure may be followed so long as the end result is a learner who can recognize both aurally and visually each of the consonant sounds and can represent it graphically on request. Also taught at this time, after the consonant sounds have been learned, is the sound of the short "a" as in "apple".

The next step is again traditional for it involves teaching the learner to blend the sound of the vowel "a" with a consonant, usually *t*, and hear the resulting combination, "at". This is a very critical point for it is essential that the learner comprehend what the teacher means when he speaks of the blending of sounds. Once the child understands the nature of what he has done when he blended two individual sounds and created a third or blended sound, the teacher begins the process of adding consonant sounds to form such words as rat, fat, sat, hat, etc. It is important that the teacher assist the child in utilizing all the senses available during this stage for the dual purpose of strengthening already functioning areas and stimulating the areas which are functioning only partially or not at all.

As the child achieves a degree of proficiency in being able to hear, see and kinesthetically reproduce these symbols, the teacher has the option of either enlarging what has been learned by repeating it with blends such as "ap", "ad", and "ag", or proceeding to the next step.

Digressing momentarily, it has been found that the learning process, especially with the young, is greatly enhanced by allowing the learner to utilize the blackboard in developing his kinesthetic facility. It allows the teacher and student to be in close proximity so errors can be observed immediately; it allows the teacher to take advantage of the learner's usually gross responses by giving him ample room to respond; it allows the teacher to help the uncertain student by standing over him and holding the chalk with the student as he prints the symbols; finally it allows the learner to profit maximally from the kinesthetic experience provided by the feeling of the coarse chalk on the board.

After the first stages have been learned, a great departure from traditional methodology is possible for the learner is now exposed to the long form of the vowel already learned but presented by means of a different character. As in the case of the short form of the vowel, the character " **æ** " is taught independently. When the teacher is assured that the learner has established a reasonable degree of identity with this new character, the blending process is again taught in such simple configurations as **pæ** , **sæ** , **mæ** , **hæ** , etc. These are followed by variations such as **læt** , **sæm** , **hæt** , **mæt** , **læm** , **tæm** , **gæt** , **gæm** , **tæp** , etc. It has been observed, especially with older children, those exposed to T.O. for a number of years, this separation and association of the same sound with differing symbols had an almost cathartic effect and often initiated significant progress.

As in the initial stages, the learner is encouraged to demonstrate what has been learned by printing dictated configurations for the purpose of reinforcing the learned skills. After the learner has been taught these two vowel sounds and sufficient practice given to allow proper associations to be made, another new element not formerly possible is added to the teaching process.

Up to this point the learner has learned to hear the two forms of the vowel in isolation and to respond to them kinesthetically. Now the learner is exposed to these variant forms side by side and asked to hear the difference between them when they are used as total configurations. This is perhaps the most critical point in the entire learning process for most disabled children, for it constitutes the exact point at which a great number of them ceased learning. For children who cannot hear the medial vowel sound in the context of a total configuration, further teaching of phonics is virtually useless; if the child cannot hear and associate a specific sound with the medial vowel and make a further association with a specific symbol, his understanding of structure and the function of the vowel in the construction of words is bound to be confused and misleading.

Great pains must be taken here to insure that the learner hears with some degree of clarity, the difference between the sounds "a" and " æ ". The word dictated must be repeated slowly at first, almost to the point of pronouncing the three individual sounds being spoken, with the gap between the sounds being shortened until the learner comprehends that when a word such as **sæm** has been uttered, it is in reality the result of three individual sounds being spoken in a lateral sequence and which can be associated with three specific symbols, each of which can be graphically represented in a lateral sequence.

The chalkboard has been found to be most useful for the same reasons already mentioned with the first pair of compatible vowel sounds being represented thusly .

| a | æ |
|---|---|
|  |  |

Once the learner has achieved mastery of both symbols and can hear the medial vowel sound and consistently associate it with the correct symbol, he can begin reinforcing his learnings kinesthetically by printing the dictated response in the correct column. Thus by means of a simple exercise, the learner is developing his capacity to differentiate between two compatible and related medial vowel sounds, associate the correct response with the medial sound and finally, reinforce the entire experience kinesthetically by adding the initial and final consonants, thus developing increased ability to perceive gestalt, develop visual and auditory memory and improve directional capability.

As facility is achieved with this exercise and more consonant sounds have been added to the child's fund, such as *w*, *b*, *k*, *v*, *n* and *s*, the same process is followed with the compatible sounds *e* and ee . When sufficient mastery has been achieved with this pair of compatible sounds, the learner is tested with all four of the accumulated elements and he is asked to listen to and identify which of the four sounds he has heard with the configuration "let" for example. If he is able to correctly hear and identify this medial sound, he is asked to associate the sound with the correct character and print the total word in the proper column thusly, . Once again, the child has received very controlled and structured practice in the learning of specific sounds and their associated symbols, with the entire experience being kinesthetically reinforced immediately.

| e | ee |
|---|---|
| let |  |

It is after this step that the learner is prepared to receive practice in the learned skills in the form of short, structured sentences based upon only those sounds learned. It should be obvious that even at this early stage in the evolution of this method that the teacher has a great deal of latitude for the creation of meaningful structures. For example,

**can hee see mee** **hee can eet red meet** **has hee seen ted**
**can green men plæ gæms** **pat can eet black seeds**

With the addition of two sight words, the and a, the sentences can be greatly varied with little change in the overall control of structure.

It has been the experience of this teacher that once disabled children develop a modicum of success and understanding of the synthetic approach being developed here, sight words can be added systematically and learned with very little difficulty. If sight words continue to present significant difficulty, and this is sometimes the case, the wise teacher will remove any pressure from the child by telling the learner the unknown word at the first sign of hesitancy. If the word is a regular word, one which can be solved by means of the teaching already done, the learner should be encouraged to utilize his skills in the solution of the word. Ability to handle sight words is at the very heart of the problem with most disabled children and as their capacity to cope with configurations improves, with carefully structured instruction and practice, the effects of the problem should become increasingly less significant. Sufficient time spent at these early stages is the best guarantee for eventual solution of the problems of even the most severe disabilities.

The value of synthetic approaches lies in their multi-sensory nature and the opportunity they provide for cumulative reinforcement of each new learning. The entire method being developed here is cumulative, yet it allows the teacher wide latitude for creativity in the development of new and more relevant materials, suited to the language background and experiences of the learner. The number and variety of language structures available increases dramatically with the addition of each new pair of compatible vowel sounds and with each new consonant sound.

An added and significant bonus that accompanies the synthetic learning of sound symbols in a letter-by-letter manner, is the virtual disappearance of former difficulties encountered with the teaching of consonant blends. With a letter-by-letter approach and the improved ability of the learner to discriminate and associate, blends never need to be specifically taught as is now the case in analytical phonics approaches. Rather it has been observed that children who acquire facility with the construction of three element configurations, can usually be taught to hear and respond to consonant blends with a modicum of instruction.

To assist in the maintenance of the controlled structuring being attempted, it has been found useful to give practice with large numbers of configurations using first the sound *l*, preceeded by the consonants which most often accompany it, namely, *p*, *s*, *f*, *b*, *c*, and *g*. As facility is acquired with words beginning with combinations involving *l*, a similar process is followed with the single consonant *r*, and the consonants which generally preceed it, *g*, *t*, *f*, *b*, *d*, *p*, and *c*. By the time this stage has been learned, most learners will have developed sufficient facility with blends to cope with almost any consonant combination.

The method continues much as has already been outlined thus far, with care being taken to test constantly the learner's grasp of the structure being taught. The vowels continue to be taught in pairings in the following order; i-ie , o-œ , u-ω , au-ou, and ω-oi . The vowel character for the sound ue as in use, is introduced separately since it is relatively simple to discriminate for the child who can perform the exercises outlined here, and also because of its infrequent use.

It has also been found useful to teach the vowels controlled by the *r* in a similar manner for the same reasons already outlined, *ar* and *or* are taught as a pair to assist the learner in developing discrimination and association with this difficult group of sounds. Children, especially those with multiple letter and sound confusions, find it extremely difficult to discriminate and associate between these sounds, thus the need for assistance in perceiving differences and the ability to profit from kinesthetic practice.

The sound governed by the *r* as heard in *ir*, *er* and *ur* and represented in i.t.a. by the character ɼ , is taught separately as a distinct auditory unit with three visual representations of the sound. If the learner is asked to kinesthetically respond to one of these, all he must do is hear and identify the correct sound and the teacher then tells which of the three is to be used in representing the configuration.

In teaching the dipthongs ʈh ŧh ʃh ȼh and wh , it has been discovered that systematic introduction is most useful in the development of good discrimination and associations. For example, assume that the learner has developed skill with the five most significant vowel pairings, **a-æ** , **e-ϵϵ** , **i-ie** , **o-œ** , **u-ω** . These ten vowel sounds can be presented on the board or on a mimeographed blank and the child then asked to find the medial sound for a particular dictated word and represent it, thusly:

**a | æ**     **e | ϵϵ**     **i | ie**     **o | œ**     **u | ω**

If the consonant dipthong to be taught is **th** for instance, the learner can receive practice in hearing and associating the medial vowel sound and kinesthetically representing it at the same time he is receiving practice in associating a consistent sound and symbol with the character **th** . He can be asked to respond to words such as **that, thæ, then, thϵϵs, thær, this, thœs, with, bæth,** etc. As can be observed, exercises such as this have the added benefit of being diagnostic in nature for the child cannot make errors for long without the teacher becoming acutely aware of the affected area.

The entire method outlined here is developmental in nature, for the learner advances to the next higher step after he has mastered a number of preceeding steps. It has the advantage of being so structured that imperfect learnings can be corrected and relearned at succeeding steps without spending too much time at any particular stage. First, the learner acquires identity of a number of individual elements, then learns how to blend them into meaningful units; then he proceeds to develop facility with first simple, then increasingly more complex sentence structures. And finally he develops his ability with paragraph and story material which can be geared to his individual and distinct language background.

This writer has found that having an instrument such as i.t.a. encourages the teacher to be creative in the construction of materials more suited to individual students than prepared materials. Local names, industries, historical sites, well-known local personages, favored games, native animals, favored recreational activities, are all readily available as material to be used in the construction of supplementary materials.

What has been outlined here so briefly is in fact a comprehensive method, suitable for all gradations of disability, from the first grade repeater to the adult non-reader. As was stated earlier, i.t.a. is a veritable linguistic microcosm and as such has within it all the necessary elements for the teaching of reading proficiency. The same method outlined here can be modified to suit any level of disability; the difference in approach will be one of degree and speed of presentation. Some learners will be able to advance through the various stages far more rapidly than will others and the teacher's principal problem often becomes one of pace and judgement in deciding how facile and proficient are the learners and where in fact are the disabling areas, so that specialized teaching can be administered.

Once the problem of decoding has been solved and the learner achieves a degree of facility with the i.t.a. medium, he begins, usually on his own, to learn the more advanced reading skills with properly transliterated materials. For the child or adult who can read i.t.a. materials, the problem of transition is literally not a problem, for the two mediums, i.t.a. and T.O. are essentially compatible mediums. What the teacher must do, is to assist in the transition in developing the learner's ability to make use of the skills he has mastered. One very useful practice to assist in this transition period for the advanced learner is the practice of having a particular section read aloud in the i.t.a. medium; then the student reads the same passage silently and then aloud in T.O. The more practice the student receives in this type of exercise, the more rapid is the transfer of skills and abilities from i.t.a.

The learning of spelling, for example, is greatly assisted by the use of i.t.a. Children who first learn to perceive accurately and then discriminate with facility have developed the most essential skills for the acquisition of good spelling habits. Once these faculties have been developed to the point of proficiency, the learner can begin to use the various memory areas to catalogue and store the infinite number of configurations that are both possible and necessary for the spelling of language using traditional orthography. However, no amount of training with i.t.a. will teach the disabled child to spell adequately without a sound, systematic approach to the accumulation of a meaningful spelling vocabulary. i.t.a. is invaluable in developing the essential skill areas, but nothing can replace systematic instruction in spelling once these areas are developed.

It must be remembered that i.t.a., as remarkable as it is proving to be as an instrument in the correction of reading disability, is not a substitute for the follow-up teaching that must accompany remediation. i.t.a. is rather a very important addition to the tools the remedial teacher may use in assisting the learner acquire basic reading skills. It greatly assists in developing those abilities essential to the learner in developing the skill necessary to perceive structure and system in language and in so doing develop his ability to cope with increasingly complex reading materials.

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### 3. THE USE OF I.T.A. IN REMEDIAL READING WITH THIRD AND FOURTH GRADERS

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We have just completed four years of teaching first grade children to read using the Initial Teaching Alphabet in the Bethlehem Area Schools in Bethlehem, Pennsylvania. The program was begun as the Bethlehem-Lehigh project for a three year period under a grant from the Fund for the Advancement of Education.

The first three years of the program was phased in beginning in 1963-64 with one-third of the first grade classes, 1964-65 with two-thirds of the first grade classes, and 1965-66 with all of the first grade classes having been taught to read through the i.t.a. medium. The final comprehensive results of this phase of the program, entitled *The Initial Teaching Alphabet in Reading Instruction,* were published in February, 1967.

This past year, 1966-67, we received Title III federal funds, under the Elementary-Secondary Education Act of 1965, to carry on the work already begun and to develop a language arts curriculum for grades two through six to take advantage of the skills that the i.t.a. taught children had acquired.

Also, in 1963-64, it was decided to investigate the possible use of i.t.a. in remedial reading. After a conference with Dr. Rebecca Stewart, in which the possibilities for the program were discussed, it was decided that each of the three reading adjustment teachers would select a small group of third grade children. These classes met for one-half hour each day and received all of their reading instruction in i.t.a. with the *Early-To-Read Series* as a basis for instruction. The children received no instruction in their classroom in either reading or spelling. The limited testing results obtainable plus teacher observation indicated favorable results. The most important factor was the teacher's observation of change in children's attitudes and work habits. Bilheimer (1966).

In 1964-65 two of the remedial reading teachers continued with their groups to reinforce skills, while the third teacher selected a new group to investigate the individualized approach.

In 1965-66, as the original control and experimental populations had reached the third grade, no remedial instruction was given at third grade level. Instead, 143 children from the fourth grades, who scored 3.0 or below in comprehension on the Iowa Test of Basic Skills, were selected for the remedial program. The classes met daily for forty minutes for remedial instruction using the i.t.a. medium. This instruction replaced the regular classroom participation in reading groups. The size of the groups ranged from 6 to 12 and the I.Q.'s ranged from 73 to 134. Classroom teachers were asked to arrange their schedules so that they would be teaching reading to the other groups when these children were having remedial instruction in reading.

Again the *Early-To-Read* materials were used but with more emphasis on the individual needs of children. Since much of the difficulty in word recognition involves vowel sounds, this was used as a starting point. Consonants and consonant blends were taught when a child or group of children encountered difficulty. The major weakness was in the auditory area, so much time was devoted to listening skills and oral work. The children could sight-read Books 2 and 3 and read some of the easy library books. This convinced them that i.ta. was an easier way to learn to read, and they were coming to class with much enthusiasm. Everett (1966).

Books 4 through 7 of the series were used with teacher-made worksheets designed to reinforce skills. Most children were now decoding words for themselves and reading quite fluently.

The children were encouraged to write stories. As with second graders making transition, these children used both i.t.a. and T.O. spellings in their writings. This was accepted as long as they used correct spelling in either medium. It took these children some time before they were able to enjoy writing freely. They had had little success in three or four years in learning to read as well as write, so these children had feared misspelling words. Gradually, with teacher encouragement, they were writing stories both as assigned work and on their own.

When transition began, spelling patterns and word analysis skills were taught. By April, most of the children were able to read at grade level with little difficulty. Some of the lower groups were reading on a 3/2 level. These children had never read on grade level before and were quite surprised to find that they were able to read books that the other groups in their classes had read, and to find that they were able to help the other groups with word analysis.

In May, the Iowa Test (Form II) was administered. The results showed that out of 143 children,

1/4 gained 0.0 to 1.1
1/4 gained 1.2 to 1.6 (median gain of 1.6)
1/4 gained 1.7 to 2.0
1/4 gained 2.1 to 3.3

Usually there is a great loss during the summer with this type of child. After testing in September, 1966, slightly over 1/2 of these children had gained from one-month to one-year-five-months during the summer months.

This past year, just about the same procedures were followed as last year. The only difference was in the selection of children. No child received remedial instruction with an I.Q. less than 90, except in a few cases where the psychologist had tested and felt the child could benefit from i.t.a. or that the child might have more potential than was shown by the tests. These children were included in the program.

Selection of the children for these classes was discussed with teachers, reports from previous years examined, and parents were invited to school to learn about the program.

All children were tested in September and May, using the Iowa Test. The results for 1966-1967 of the 123 children in the program were as follows:

1/4 gained 0.0 to 0.8
1/4 gained 0.9 to 1.4 (median gain of 1.4)
1/4 gained 1.5 to 2.1
1/4 gained 2.2 to 3.7

The following is a sampling of a few individual scores:

| | Sept. 1966 | | | | May 1967 | | Gain - Loss | |
|---|---|---|---|---|---|---|---|---|
| C A | I Q | MAGP | V | C | V | C | V | C |
| David<br>126 | 89 | 4.1 | 1.7 | 2.2 | 4.0 | 5.1 | +2.3 | +2.9 |
| Mary<br>138 | 94 | 5.6 | 3.2 | 2.0 | 3.6 | 4.5 | + .4 | +2.5 |
| Dylan<br>107 | 104 | 4.0 | 2.8 | 2.6 | 4.6 | 6.3 | +1.8 | +3.7 |
| Anthony<br>111 | 106 | 4.6 | 3.4 | 2.2 | 4.5 | 5.5 | +1.1 | +3.3 |
| Marcella<br>109 | 109 | 4.7 | 3.5 | 2.6 | 5.2 | 5.6 | +1.7 | +3.0 |

Reporting to parents during this period of remedial adjustment, could not be achieved satisfactorily by the usual methods. The classroom teacher was asked to put no letter marks on the report card in reading or spelling, but to simply indicate on the report card that the child was in an i.t.a. program. Each remedial reading teacher then wrote a personal letter of evaluation of the child's progress. The replies, for the most part, about the program and their child's participation in it were most favorable. Occasionally, as in any reporting situation, one was returned that was not favorable. The teacher would then arrange for further consultation with the parent or parents.

Parents, teachers, and children were quite elated with the results. They watched with interest, the progress of these children who had failed in learning to read using traditional orthography, and who, after a few months of learning to read using the i.t.a. medium, were apparently having success.

One remedial reading teacher reported that:

"Subjectively, we found many reluctant, reticent children now gaining enough confidence to answer questions, and to read orally where previously they had not entered into any class activity that involved reading."

Another reported that:

"We have felt confident that our results will be worthwhile. It has been a gratifying experience working with these children in this medium. We know that not every child will be an excellent reader but we feel that even the poorest child has gained confidence and a certain amount of assurance that he is not entirely a failure."

Beyond this, i.t.a. used in remedial situations has helped these children to express themselves in writing as evidenced by analysis of their work. It has improved their skill in many of the language arts areas, including penmanship, the mechanics of writing, and vocabulary, as well as reading. It has also dimmed their fears about putting their thoughts and ideas on paper.

What about the percentage of remedial readers who have been taught to read through the i.t.a. medium?

It was reported in *The Initial Teaching Alphabet in Reading Instruction* that there was a marked decrease in reading retardation of i.t.a. students in each of the three years of the program. This year, in an article written by Dr. Mazurkiewicz which appeared in *IMPACT* (A News-letter from the i.t.a. Demonstration and Language Arts Curriculum Development Center) the problem was further researched by following through on the fourth year study.

Using the total population with the remedial reader defined as a child whose comprehension score was below grade level and who showed a difference of more than one year between his M.A.G.P. and his comprehension score on the Iowa Test, he reports that 21.9% of the T.O. population could be classified as remedial while only 13% of the i.t.a. population could be similarly classified. The i.t.a. population was found to have 40.6% fewer remedial readers than the T.O. population when the population included a large proportion of culturally disadvantaged children. When the population was equated on a socioeconomic basis, the percentage of remedial readers in the i.t.a. population dropped to 10.6.

When the remedial reader is defined as a child whose M.A.G.P. and reading comprehension score differed by more than one year, similar results were found on the equivalent populations with i.t.a. having 11.7% and T.O. 24.1% remedial readers.

Thus the data confirm that i.t.a. would reduce markedly the number of retarded readers in an average population as well as provide a new medium for remedial instruction.

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## D. ADULT REMEDIAL

One of the most exciting potential uses of i.t.a. has been the possibility of working with adults in a remedial situation. Many investigators have written above the advantages of using i.t.a. with an adult population emphasising the psychological value of the different appearance of the characters. They also frequently emphasize the importance of the subject matter which may be prepared so that the content is useful, meaningful, and of an appropriate interest level to adults to a greater degree than is possible with T.O. Thus far, work in this field has largely consisted of case studies and small-scale research projects. The interested reader may wish to refer to the sections on remedial reading with children in this volume for a more complete picture of the problems and possibilities in using i.t.a. in remedial reading. Further, each year, one issue of *the i.t.a. Foundation Report* includes a catalog of all i.t.a. materials (i.e., text books, workbooks, auxiliary apparatus, typewriters, etc.). In the section on supplementary readers, materials have been characterized as appropriate for remedial reading.

The paper by Mrs. Vera Hannanberg in this section is typical of much of the work with i.t.a. and the adult remedial situation. She emphasizes the importance of the special material she felt it was necessary to develop to work most effectively with this group. She argues that one could not develop comparable materials in T.O. even if the advantage of a new appearance and the sense of a fresh start on the part of the adults was not important. Mr. S. C. Edinger's article relates a general method for using i.t.a. with adults, cites its potential values, and the reasons which underlie them. Dr. A. Sterl Artley has presented a paper in which he describes in general terms some special materials he developed for his project. As part of his material, he suggests a technique for transition from i.t.a. to T.O. In his materials, the left-hand side of the page is printed in i.t.a. and the right-hand side in T.O. (The interested reader should review the papers in these proceedings dealing with problems of transition.) Thus far, the i.t.a. Foundation is aware of four different approaches of handling transition from i.t.a. to T.O. In general, the system which appears to be favored in Great Britain involves *no* formal teaching of transition. Two somewhat different strategies are used respectively by i.t.a. Publications Inc. and the Educational Research Council of Greater Cleveland. Dr. Artley's approach represents the fourth technique. Most teachers, who have experienced i.t.a. in the classroom, report that transition is a much less serious problem than we may be led to believe by reading literature. Nonetheless, the individual who wishes to use different strategies has a number from which to choose should he believe it to be educationally important.

Both Dr. Artley and Mrs. Hannenberg note a particular special problem with adults which, they suggest, tends to be somewhat less critical for children. They note that adults do not seem to be sensitive to variations in the spoken sounds of English. If this is true, it is possible that special supplementary materials and special techniques may be needed for dealing with this issue.

Colonel Colin Stevenson's paper, dealing with the success he has experienced with i.t.a. and illiterate recruits in the British army, takes a quite different view to the problem of the need for special materials with adults. In this paper, as well as in other articles, Colonel Stevenson has stated that the sheer success experienced in reading for the first time is sufficient to motivate adults to a very high level. His experience suggests that even fairy tales are quite stimulating to this group. A number of reasons may be suggested to account for this. First, the feeling of success itself in finally conquering the task which seemed formerly impossible to the student. Another, the fact that learning to read for these men is a sufficiently difficult task itself, and abstract concepts or difficult material may impose too great an additional burden to be beneficial - or at least necessary. Finally, it is possible that adults in this category typically have come from such severely deprived backgrounds that, although they undoubtedly view fairy tales in a different perspective than the very young child, they may be seen as "exciting adventure stories" as has been observed by many of Colonel Stevenson's men.

Colonel Stevenson's paper also emphasizes the title of the proceedings: i.t.a. as a language arts medium. He discusses the importance of his men writing with typewriters in both i.t.a. and T.O. to make their remedial education focus on the broad range of communication skills rather than on reading alone.

The interested reader will find a bibliography of articles relating to the use of i.t.a. in an adult remedial setting below.

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## 1. REMEDIAL READING METHOD AND MATERIALS FOR ADULT ILLITERATES EMPLOYING THE PITMAN INITIAL TEACHING ALPHABET

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It is estimated that there are more than twenty million illiterates in the United States today. Studies have shown that illiterates form the hard core of the unemployed, that they are the last to be hired, and the first to be fired. Studies show that poverty and illiteracy are linked in a chain which produces a wide range of anti-social patterns. Delinquency, and crime, both major and minor are included in this pattern of anti-social behavior. The incidence of crime among illiterates is much higher than in any other group in the country.

All of the programs instituted by the federal government in its attack on poverty have had to concern themselves with the special problems of the illiterate, for no matter what the main focus of the program is, illiteracy is a major problem.

The program with which I have been associated for the past two and a half years is the Manpower Development Training Program, administered by the Board of Education of the City of New York. MDT is designed to provide vocational training and vocational upgrading to adults 17 years and older. Our branch of MDT couples vocational training with basic skills training. Trainees applying to our program are tested to determine their basic skills, but enrollment is open to all, to the literate as well as to the illiterate.

In the early period, illiterates admitted to our program constituted about ten percent of the total. This ten percent might be described as functionally illiterate. Since that time the proportion of illiterates has grown and now includes total illiterates, (those with no symbol recognition).

The administrators of MDT anticipated the need to provide special remediation services for the illiterate, and even prepared to experiment with adult reading programs designed to eradicate this illiteracy as quickly and as efficiently as possible.

The methodology and materials which I shall outline in this paper are the products of two and a half years of trial and error in the classroom with adult illiterates. The program employs the Pitman initial teaching alphabet and has been used with hundreds of trainees in all of our six centers in New York.

The method and materials which we shall describe have been revised, edited and altered throughout the two and a half year period. No work sheet or reading selection is kept in the file until it has been tried in three different classes with three different teachers. Those materials which we retain must prove effective with not one group, but at least three. They are replaced as soon as we can produce new material that seem to answer the needs of larger groups of trainees.

While we have achieved reading achievement improvements that are probably unmatched, we are still seeking shorter cuts to our goals, and are convinced that with continued experimentation even more dramatic success is possible.

The problems which we face in remedial reading for the adult have not decreased with our success, but rather increased.

In the early period only the more intact and less seriously disabled trainees responded to the services provided by MDT. As word of our achievement filtered out, we began to reach into the hard-core of the illiteracy problems. Whereas the first trainees were functional illiterates, larger and larger numbers of total illiterates are now applying for admission. Brothers, sisters, and children of former trainees are now applying and asking for reading remediation. They have been encouraged to seek help on the strength of the achievement of former trainees.

While the entry of larger numbers of illiterates in our program has intensified the need for the development of effective programs, it is, we think, the most encouraging sign we have seen.

Most of the functional illiterates who come into our program are young adults from the Metropolitan New York area. The overwhelming majority are native American Negroes, dropouts from the New York City junior and senior high schools. We have a considerable number of Puerto Rican trainees, some of whom are Spanish and English illiterates, and some of whom have literacy in Spanish and need special classes for English as a second language.

We are developing programs to meet all of the literacy needs. This paper shall confine itself to the i.t.a. program for adult functional illiterates in MDTP.

A functional illiterate may be defined as a person who reads below fourth grade. It has been our experience that this functional illiterate has a sight-word vocabulary ranging between 150 and 200 words, and no reading skills at all. This has been the consistent pattern for more than two and a half years. Coincidentally, almost all of the trainees place the beginning of reading failure in the third grade, precisely the stage at which reading skills teaching begins in the New York City schools. It is an appalling truth that all of these trainees advanced to 9th, 10th, and even 11th grade in school, with no further advance in reading skills! Conjecture about the numbers of such non-readers in our present 9th, 10th, and 11th grades is frightening indeed.

My early experiences with foreign-born illiterates had taught me that it was possible for an illiterate to acquire many educational strengths, and much sophistication, despite the absence of reading and writing skills. This conviction has been reaffirmed in my experience with young adults in our program. I was convinced, therefore, that the most practical course to be followed in an adult literacy program would be one which capitalized on adult strengths, while attacking the problems of adult disability.

Adulthood, or adult context, was therefore our most powerful strength, from which we could proceed to build a remedial program.

It has been our repeated experience that, despite reading failure, most of our trainees are neither stupid nor ignorant, nor slow-learning, for that matter. Many are intellectually acute, have an impressive vocabulary, and know a great deal about the world around them. High motivation to learn to read, and a sharp awareness of the social and economic consequence of illiteracy is the rule, rather than the exception. This is true even for those trainees with records as discipline problems in school, and those who have prison records.

We had therefore two significant strengths to dictate the course which the development of a methodology should follow.

Of equal importance in designing this remedial program were the areas of general weakness displayed by the trainees. A characteristic weakness which we observed, was poor auditory receptivity, particularly with vowels in isolation. We have given considerable thought to this problem in an effort to discover whether the inability of most of our trainees to hear the difference between short vowels in isolation is the cause, or the effect of non-reading. Auditory problems in our trainees are further complicated by the presence of provincial Southern speech patterns.

It is difficult, if not impossible, to teach our trainees the distinction in sound between the short "a" and the short "e". There is similar confusion with the other short vowels as well. In any case, for our purposes, it would not matter very much whether the poor auditory response was caused by reading failure, or was the result. The fact remains, that in the absence of precise auditory responsiveness, alternate reading teaching routes must be found.

Another fairly general characteristic of our trainee is that he has a predisposition to the concrete, to the pragmatic, to the palpable and observable, if it falls within his context. Our trainees do not respond well to abstract concepts, and to context that is alien to their environment. Again, there is room for considerable conjecture about cause or effect, but for practical purposes, we follow the pattern of the trainees, and confine our concern to the palpable and observable facts.

Survival in the ghetto requires the ability to deal with the concrete, with the real, with the palpable. Isolation has produced a ghetto context which is different from the main culture. Perhaps both of these factors have dictated the development of some of the characteristics which I have described. In any case, these are the realities which we faced in developing a remedial program tailored to the needs of our trainees. We tried to use the strengths as the access routes to the areas of disability.

In brief outline then, the following characteristics of the adult illiterate determined the direction of the methodology development:

1. Adult worldliness and adult language sophistication.

2. Sight vocabulary of 150-200 words, words containing the major phonemic combinations found in English.

3. A direct and pragmatic approach to problem-solving and to the dynamics of human behavior.

4. Intense motivation to learn to read, and an awareness of the consequences of reading failure.

5. Ability to respond to contextually suited language and life situations.

6. Familiarity with vocational materials and procedures.

7. Poor auditory receptivity and response.

## The Methodology

The sight vocabulary of the adult illiterate reflects the pre-primer, primer, first and sometimes the second year vocabulary that is taught with the aid of the basal readers in elementary school. The high-frequency phonemes found in English are usually contained within this sight vocabulary. These phonemes cover the five vowels. They are usually recognized as small sight words, rather than as sound combinations. Nevertheless, we find that these phonemes are reproduced with sound faithfulness, even though they are recognized mostly by sight. The phonemes which can be extracted from this limited sight vocabulary can be outlined as follows:

*a*

am, an, at, ar (car)

*e*

en, (men), ed, (red), et (N.Y. Mets)

*i*

in, it, il (milk)

*o*

on, off, ot, (hot, or spot), op (stop) (or)

*u*

up, us, um (gum)

This outline of phonemes covering all of the vowels, provides us with a very good base upon which to build a sight-sound relationship. With the support of this sight recognition, we are able to build a bridge between sight and sound. While it has been estimated that less than 60% of words in English (T.O.) can be identified by finding these small word parts, the dependability of these small word parts is much greater with the use of the Pitman alphabet. With the aid of Pitman spelling, the "*ed*" in br*ead* is consistent with the "*ed*" in *ed*ucate. The phoneme is represented in a phrase which is familiar to the trainee. With the addition of this context support, we are exploiting the sight, and the context, which are in this case strong, in an effort to strengthen the sound. Two other significant advantages are derived from the use of adult context phrases. In the first place, the adult usage emphasizes the adult character of the program. The inhibitions and feelings of humiliation with which the adult illiterate is burdened, begin to fade. The early use of phrases also serves to encourage the development of left to right eye movement, which is essential to reading in English.

The technique of finding the phoneme as the first step in phonic analysis is referred to as finding the "small word clue". A composite small word clues sheet covering all of the phonemes outlined above is used to introduce the trainee to the technique. This step is followed by a breakdown according to separate vowels. It begins with a breakdown and analysis of *an, am, at* on one worksheet. The phrases on this worksheet might be as follows:

**am**

**ambuelans attendant**

**kœdak cameɹa**

**rædiœ amplifieeɹ**

**hammeɹ and nælz**

**an**

**ɑɹmd bandit**

**standard tiem**

**anseɹ the fœn**

**cɑɹ manuefactuereɹ**

**stoɹ manajeɹ**

**at**

cɑr battery
atlantic œʃhean

nasty brat

flat tier

dress pattern

The first "a" worksheet also contains sight sentences employing other short "a" combinations which will be subjected to close analysis in the following worksheet. The worksheet contains words, phrases, sight sentences, and sentences with fill-ins in which the phoneme or word part containing the phoneme, has been omitted. Sentence fill-in thus requires the understanding of the missing phoneme or word part containing the phoneme. The sight sentences are designed to anticipate and prepare the way for the subsequent "a" worksheets.

The following units represent a summary view of the organization of the phoneme worksheets.

**ed**

credit cɑrd
nuezpæper editor
bord ov educæʃhon
bred and butter
stedy job

**en**

mental helth
apɑrtment hous
frendly peepl
t.v. entertæner
suspended sentens

**et**

metal wurker
settlment hous
lettus and tomætœz
petty caʃh
tetanus ʃhots

get redy, get set, gœ!

in
infant's wær
pleed innosent
win or lωz
the flintstœnz

it
nue york sity.
ritten test
kick the habit
litter basket

il (milk)
silver spωn
military duety
bildiŋ industry
sivil servis

on
con edison
confidens man
onor rœll
cronic illness
hær tonic

off
coffee and cæk
soft driŋk
second offens
bronz coffin
job offeriŋz

ot
hot and cœld
rotten luck
cotter pin
parkiŋ lot
blud clot

op
job opportuenity
copy the anser
elevætor operætor
sloppy wurker
ʃhop forman

oɹ

oɹganiezɖ læboɹ
grœseɹy stoɹ
foɹɖ mœtoɹ cumpany
scoɹȼht ʃhiɹt

aɹ

caɹ batteɹy
aɖjust ŧhe caɹbueræ toɹ
baɹbecueɖ spæɹ ribz
ȼhaɹcœl-broilɖ stæk
ȼhaɹj account

us

mustarɖanɖ ketȼhup
robbeɹy suspect
vanilla custarɖ
breɖ crust
ɖust mop

up

suppeɹ tiem
marriɖ cupl
puppet ʃhœ
stumac upset
uptoun lœcal

um

steɖy incum
breɖ crumz
reɖ umbrella
nuezpæpeɹ colum
summeɹ vacæʃhon

Each vowel unit in a sequence begins with the sight-familiar phonemes. These phonemes are exercised until their sound consistency has been established and their identification made. The next step is to introduce a set of phonemes with less familiar combinations. The vowel remains constant. For example, worksheet #1 in the short "a" sequence is *"an, am, at"*. Worksheet #2 in the short "a" sequence will concentrate on the less familiar "a" forms, *"ad,* and *ack"*. These phonemes are isolated and identified in worksheet #2 following the same pattern used for worksheet #1.

Again, phrases exercising the phonemes that are being studied are used:

**ad**
**help wonted ad**
**hie scool graduæt**
**brœken ladder**
**black cadillac**
**plad stamps**

**as**
**master mecanic**
**blast furnæs**
**cast ieron**
**nasty temper**
**fasen yoor seet belt!**

**ac**
**dress factory**
**black pouer**
**bræk acʃhon**
**spræ lacker**
**cleer ʃhellac**

All of the major vowel combinations are shown as phonemic units during the course of the remediational procedure. Short vowel exercises proceed from the sight familiar phonemes to the less frequent, more abstract combinations. However, we have found it practical to do no more than two groups in one vowel unit in succession. The sequence moves from two units of short "a" for example, to long "a" phonemes. The augmented Pitman symbol is introduced. While no special emphasis is placed on the contrast between long and short "a", many trainees make this discovery themselves.

Long vowel sounds seem to be heard and understood more readily than short vowels. It is my guess that the length of the sounds is a factor in the ease of identification. The excellent graphic design of the augmented symbols contributes in no small measure to the ease with which trainees identify them, and transfer from them to the equivalent forms in T.O.

While most trainees are able to cope with the worksheets which cover three phonemes together, some are not able to move at such a pace. Worksheets which treat each combination separately are used to slow the pace. For example, a worksheet dealing with the *"en"* combinations only will introduce the short "e" sequence. The two other high frequency "e" combinations, *"ed"* and *"et"* will follow, each treated separately. The combination 3 phoneme unit will summarize the sequence.

All of the worksheets have follow-up exercises, with fill-ins, and homework sheets which test not only the sounds but the phrase comprehension as well. The pace at which the remediation proceeds is set by the capacity of the trainee to deal with the material.

As I have suggested, the pace will vary, but the outline or general direction does not. The objective is to proceed from the sight-understood phonemes to the less frequent, more difficult combinations. We have found that after this exposure, the trainee understands by inference, the consistency of the vowel sound.

It has been our experience that structure, or usage teaching is not only possible at this level of reading disability, but in the case of adults, absolutely necessary to sustain interest.

In conjunction with the teaching of the "*en*" phoneme, there is an exploration of "*ment*". These familiar phrases designed to illustrate the usage and designed to build sight at the same time. Phrases such as "apartment house", "department store", "employment office", "retirement fund", "homework assignment", and "glove compartment" serve to reinforce the "*en*", provide beginning structural analysis skills, and build sight.

As the "*ment*" phrases helped to reinforce the understanding of "*en*" and the function of endings in English, so does the use of compound words with "out" and "house" help to support the teaching of the "*ou*" sounds. Phrases illustrating the use of the compound segment "*out*", as in "shop layout", "outdoor paint", and forms employing "house" such as "housewares department", or "furniture warehouse", teach not only the sound of "*ou*" but introduce compound words. The reading facility which results in being able to identify large structural segments in compound words is most gratifying.

If, as we suggested earlier, context clues are used as a support while phonic and sight skills are being built, then it is critical that the phrases which are used be familiar to the trainee. The choice of familiar phrases can only come from a familiarity with and understanding of the language usage patterns of the trainee. The phrases should not be slang phrases, but should reflect the speaking language of the student. Slang phrases vary greatly from group to group, and are generally short-lived.

The choice of phrases in our curriculum was made on the basis of much trial and error in the classroom. Careful observation of the language patterns of our trainees in the classroom gave us our clues.

It has been suggested that the same procedure that we use in our classrooms with the Pitman i.t.a. would work equally well in a parallel T.O. program. I am convinced that the language controls and limits which we would have to set if we used T.O. would defeat our entire purpose. By regularizing and minimizing the complexity of English spelling during the remediational period, we are able to exploit fully the context strengths of our trainees. If a trainee had to contend with the extreme variations in spelling at this beginning stage, the likelihood is that he would never be able to recognize the familiar phrases, and they could not be used to help him build phonic and structural strengths. The use of T.O. at this stage of disability would therefore require controlled and prescribed language usage. In a program for adults this would be a disaster.

The systematic movement of phonemes from initial, to medial, to final positions is designed to achieve two significant reading aims. First, it is intended to direct the eye to the identification of the phoneme in the various positions which it can assume in English. It is also intended to give directed eye movement to trainees afflicted with laterality. The inclination to read from left to right, rather than right to left, and to reversals, which is characteristic of the lateral reader, is discouraged if the eye is systematically directed to follow the moving phonemes. For disabled readers of this type, we begin the presentation of the phoneme in a final position, and gradually move it to medial, and then to its initial position. We have had most encouraging results from this practice.

The teaching procedures which I have described for vowel sounds, for structural parts, are also applied to the teaching of consonant blends. Blends too are taught in their various positions. The "*br*" blend for example, would be shown first in a phrase such as "*br*and name", and then in "um*br*ella stand".

The major blends are taught in groups having a common initial consonant, and then those having a common second consonant -- (*bl*, *br*), or (*br*, *or*, *dr*, *fr*, *gr*, *pr*, *tr*).

The methodology which I have outlined is designed to exploit language as a reading teaching device. With our trainees, language is a source of strength from which we can draw during the remediational attack on the areas of reading weakness. The only restriction to which we yield is that the language be contextually suited to our trainees -- language that is familiar and situations which are related to their lives.

The approach which we use in our remedial reading program seeks to exploit all of the conventional reading teaching tools -- the building of sight (gestalt), the development of phonic and structural analysis skills, and the encouragement of context reading. We have altered the sequence, and varied the emphases, in a program designed to teach reading to a special population of adult illiterates.

## The Reading Materials

During the first months of our program, before we had developed our own reading materials, we relied on a combination of childrens' materials, and adaptations from reading texts for our reading selections. While the worksheets, and blackboard language lessons were adult, and followed the pattern outlined earlier in this paper, the reading selections were limited, child-oriented, and dealt with subject matter that was of limited interest and value to our trainees. The context provided no clues, and the reading was painful, and unrewarding. It seemed as though the only product of these early reading experiences was frustration.

Our early reading tests reflect this serious void in our program. The early results showed an impressive advance in word recognition skills, and a much smaller advance in context reading skill. Most trainees advanced three to four years in word recognition test (power test) and only two years or less in the timed paragraph reading test, (applied reading skill). These test results were found after 20 weeks (100 hours) of remediation.

In evaluating this disparity in reading achievement advance, it was my feeling that this gap might in some measure be due to the limited amount of adult reading experience provided in our program. We simply did not provide our trainees with enough of the reading materials which help to build a sight vocabulary and contextual reading skills. These early test results therefore provided a sense of urgency with which I undertook the development of adult reading selections. It was my hope that if I could build a sufficient supply of adult materials, suited to the interests of our trainees, I could breach this gap in reading skills development.

The trainees whose reading growth is described in the table below, began their i.t.a. remediation at the end of June, 1966. Originally, they were divided into 2 groups of 5 and 6 trainees. The adult materials to which they were exposed were developed during the *17 weeks* of their remediation. These two groups were the first to complete the remedial reading program on a complete diet of our own adult reading materials.

Three of the original 11 trainees left school before the retests were administered and were unavailable to us.

| Trainee | | Vocational Group | Intake Reading Score | Spache Silent Reading Comprehension after 17 weeks | Spache Word Recognition List 3 after 17 weeks |
|---|---|---|---|---|---|
| 1. | B.M. | Merchandising | 3.5 | 7.0 | 5.5 |
| 2. | Th.M. | Machine Shop*** | illiterate-untestable | 7.0 | 5.5 |
| 3. | P.W. | Machine Shop | 3.5 | 8.5 | 6.5* |
| 4. | R.P. | Woodworking | 3.8 | 8.5 | 6.5* |
| 5. | H.A. | Machine Shop | 3.0 | 7.0 | 6.5* |
| 6. | S.P. | Metal Fabrication | 3.5 | 7.0 | 6.5* |
| 7. | Mc.S. | Building Service | 3.0 | 8.0 | 6.5* |
| 8. | T.M. | Com.Occupations** | 2.3 | 7.5 | 6.5* |

* The Spache Word Recognition List 3 allows for a maximum reading grade score of 6.5 Thirty-three correct answers out of a list of 40 yields a reading score of 6.5 All of the trainees who achieved the maximum score on this test answered at least 37 correctly, suggesting that their proper skills exceed 6.5.

** This trainee exhibited symptoms of severe laterality.

*** This trainee was unable to take a reading test. On admission to remedial reading class he had consonant recognition only.

The improved performance of the June trainees in the silent reading comprehension test is, we think, in large measure the result of the adult diet to which they were exposed. In the 17 weeks of their training, they were reading *no child-oriented* or contextually remote materials.

The results achieved by the first two groups to complete the remediation with adult materials exclusively, are not exceptional. Each successive group has followed the same pattern, with remarkably dependable consistency. Most trainees score between 5.5 and 6.5 on the Spache Word Recognition test, and between 7 and 8.5 on the timed reading comprehension test. There seems to be no difference in achievement on this test between those trainees who have had formal transition and those who have not. This would seem to confirm our early suspicion that transition is an on-going process. Transition coincides with the disappearance of reading disability. It would appear that reading skills acquired in one orthography are automatically transferred to another.

Because ours is a vocational program, we have leaned very heavily on the world of work for our reading subject matter. We found that shop vocabulary and language was an invaluable teaching tool. We have generalized our vocational materials in a way that would make them equally appealing to trainees in all shops. I have written selections which attempt to deal with serious problems shared by all working adults, and especially by this special population. Fiction has been our best vehicle for dealing with such problems as chronic lateness, authority figures, getting along with fellow workers, managing hot tempers, honest self-evaluation, et cetera. Because fictitious characters and settings are used to present the problems, we have avoided the pitfall of preaching. Because we talk about problems which are familiar to our trainees, they are able to contribute to the reading experience. The subject matter, the settings, and the language are familiar to our trainees. Thus they are able to build sight, to use context clues, and to react to the reading situation with experience of their own.

The selections are presented in a sequential order to match the order of phonemes being taught. The language used is simple and conversational, and is calculated to build sight.

During the period that a class is working with short "e" phonemes, the reading selections which are prescribed are: *A Dead End Job; Mental Health; Mental Health and Disease; A Bread and Butter Job; Lester Quits His Job; The Ten Minute Coffee Break*, and many others of varying degrees of difficulty. To accompany the "i" sequence, there is *Will's White Shirt*, which describes a fight between a dandy husband and a slovenly wife over a clean white shirt which must be saved for a job interview. For the "u" sequence, there is *A New Future For Bill* which describes the feelings of a young boy who has always been called "stupid".

Most of the reading selections developed for disabled readers in the i.t.a. remedial reading program have been transliterated into T.O. for use in our regular basic education classes. Despite the simple conversational writing style, the subject matter has made these selections as suitable for our competent readers as they are for the functional illiterates.

At present, our reading selections number more than 150. In addition to the "job orientation" selections described above, we have adapted materials of specific vocational interest, such as *Alloys* for welding trainees, *Aluminum, The Properties of Metals; The Discovery of Electric Welding;* and *The Story of the Typewriter*. We have also adapted chapters from the Biography of Malcolm X, from writings of Dick Gregory, and Richard Wright.

Many trainees who entered our program as non-readers, leave with reading skills of 8th grade and above. For them a complete re-evaluation of vocational goals and life goals becomes possible.

Many go directly into high school equivalency classes. A number have begun to wonder about the possibility of college. But for all, whether or not reading has effected a change in life goals, the newly acquired reading strength has effected significant personal change and growth.

Trainees who have been exposed to our i.t.a. remedial program are distinguishable from other trainees by several characteristics. In the first place, they all seem to have structural analysis skills which are unmatched by all of the better readers. They make much better use of phonics in spelling, and become good T.O. spellers. But possibly of greatest significance is the feeling about reading which most of these erstwhile non-readers seem to have. Most of these trainees leave our program permanently addicted --- to reading!

## 2. THE UTILIZATION OF I.T.A. BOOKLETS WITH HIGH SCHOOL AND ADULT "NON-READERS"

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This report attempts to describe the use of initial teaching alphabet (i.t.a.) booklets by "non-readers" in two small-group tutoring situations. The older group of adults has been functioning for two years as an Adult Basic Education Project of an evening high school.* The other group was of high school age students from three classes of an Alhambra, California, continuation school during one school year.

Even though the adult evening group involved more persons, a greater span in age and ability, a longer period of operation, etc. this first-hand description by the tutor will be based mainly on twenty-two high school students under eighteen years of age who "started" reading with i.t.a. booklets. This latter group was seen daily while the evening students met twice weekly.

### I

### What About the Cultural Heritage of "Non-Readers"?

These students were about equally divided between Latin-American and Anglo-American cultural backgrounds. All of them, excepting two who recently arrived from Mexico, spoke the English Language. The oral communication of these two was limited but sufficient for tutoring purposes.

The twenty-two were all of average ability and not qualified for any special classes for the "exceptional"student.** They were assigned to the continuation school because of extraordinary conditions. Many of these boys and girls must perform work outside school, others have unusual home or family problems, and others have been unable to benefit from the formal type of classroom instruction in the large comprehensive high schools.

It must be added that these twenty-two students constituted only about ten percent of the total school's enrollment. Their diagnostic records revealed that they had not been working up to their scholastic potential. They were "under-achievers". If we call them "non-readers" it is because their functioning oral reading vocabulary was below the fourth grade level.

### II

### Is This a High School Sub-Culture?

Reading problems seem to be more of a "male phenomenon" in our "high school culture". The only girl among the twenty-two was a fluent speaker of Spanish and just learning to speak English. However, with the evening groups, there was a normal balance of the sexes.

In essence, we have a "male" group of "high-schoolers" who have failed to master the "reading or decoding" of the English Language. Our traditional orthography (T.O.) is "suspect" and a possible contributing factor to the problems of remedial reading.

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* Economic Opportunity Act Title 2B Project with El Monte Adult School

** Those who deviate from the normal or average (gifted, handicapped, etc.).

These young men have lived through years of "schooling" and have survived with their own particular social-cultural group. Perhaps, their "native intelligence" and often transient living experiences have blessed them with the skills of adaptability. "Their failure" may be with the nature of our English orthography. They have not mastered a "system of right or correct writing". But, they certainly are well motivated and personally concerned about this failure label -- a "non-reader".

III

What Possible Defects Affect Reading Failure?

Concerning this failure to read Keith Gardner (1966) suggests three areas to consider:

> "First, there is the possibility of organic defects within the pupil. Secondly, there is the operation of environmental forces; social, economic, linguistic and psychological, upon the pupil. Lastly, one cannot ignore the role played by the attitudes of a school nor the nature of previous teaching."

One does not always know which area of defects is more operative. Nevertheless, there is concurrence with Gardner's conclusion that "the fundamental role of i.t.a. is to organize word-attack skills to the treatment of severe reading difficulty, as opposed to the cases of reading retardation----." This observer can contribute little in this specialized area.

However, with the "reading retardation" or "minimal readers" area, there is further agreement with Gardner:

> "Here the most satisfactory approach has been to use i.t.a. as a confidence building device with minimal readers. This can be supplemented by such material as the S.R.A. Laboratory. The result of combining the initial impact of i.t.a. with the planned development of reading skills in T.O. opens great possibilities." *

IV

What About the Role of Attitudes (School and Teaching)?

Being cognizant of the intricate cultural and psychological factors of the "non-reader" only points up the further dynamic role of the tutor who is involved with reading failures.

Our tutor is essentially a special instructor, working individually at first with each new "assignee". (Each student has been previously screened by the school district's "diagnostic" service.) Here, the tutor becomes an educational therapist.

Establishing immediate rapport is a necessary skill of the tutor as he welcomes each new student. They "dribble in" to the continuation school period-

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* Science Research Associates, Reading Laboratory (Elementary Series)

ically from the regular high schools. The tutor and new student are introduced with the immediate object of mutually discovering the oral reading grade level. Within a few minutes (by using the W.R.A. Reading Test) both are aware of the problem. Jastak & Bijou, (1946). Let us now turn to the school setting.

For the casual visitor we are housed in what was an office with accordian-type screens and plywood partitions. There are six large tables scattered around the perimeter of a 25x25' room. The "new freshman" or assignee is asked to join the tutor at the central desk.

The "older freshmen" are working in rather isolated situations since they are facing the walls with their backs to most of the room. In time there may be opportunities for some collaborative reading activities at the 3x6' work-tables.

In this physical arrangement there is a privacy and yet not an isolation from the student's peers. The new freshman, even though somewhat on the defensive, now has shared his basic problem (less than a fourth grade reading) with his tutor. If this educational arrangement suggests a type of "shock therapy" it may very well be just the prelude to the "visual shock" of the "new look" of the initial teaching alphabet.

## V

## Are There Techniques of Tutoring With i.t.a.?

These young men know very few isolated, (i.e., out of context) English words as found in the vocabulary list of a test. But, with the i.t.a. booklets their anxiety is lessened.* They are intrigued by the colorful, humorously illustrated, covers of paperbacks that seem like misplaced comic books from street corner shops. These booklets are more akin to movie cartoons and the new animated characters on television. Students can immediately grasp the everyday drama of people (including animal characters) with problems like their own.

Our teenagers love this kind of modern pictorial literature in paperback edition. But, what about these new "funny" letters and no CAPITALS! The new student is curious. He may already know the gist of the story and is seldom reluctant to learn the "secret code" of the new "teaching alphabet". A large chart of the forty-four English characters with their matching words and pictures builds confidence in the new student because he can figure out the pronunciation from this i.t.a. wall chart.**

As an introduction to the new symbols, this tutor has found that the only explanation necessary is usually the group of long vowels characters. Downing, (1964). This might be explained as the silent "e" riding "piggy-back" on all long vowels. These silent "e"s are a constant reminder that silent letters often follow English vowels. By having the new student point out these "piggy-back" long vowel combinations and then having the tutor respond with the oral counterpart, the student immediately grasps the simple one-to-one relationship of letter and sound.

At this point it is essentially a matter of "turn around is fair play". Now the tutor points out the new long vowel symbols while the student gives the oral responses. The tutor's retracted pen serves nicely as a "magic wand" for both, in acquiring the secret code of i.t.a.

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* Published by Scholastic Book Services

** Also available from Scholastic Book Services

As the new student directs the tutor (by the pen) through the first few sentences, there must be a simultaneous oral response by the tutor. Setting such a "spoken example" insures immediate success for the student, because many "non-readers" have already developed to a high degree this skill of "memorizing" oral patterns.

This "feed-back", however, must be a true correlation of oral responses with the proper visual symbols. Here, the tutor must point to the words and await the proper responses. By letting the pointer, (i.e., the pen) do the directing, the oral speech patterns of the student are not interrupted and distorted (comprehension-wise) by the tutor.

Now we have the student directing the listening, then the tutor directing and listening. This "turn around" or "give and take" is a fundamental of creative tutoring. Both are participants. Each must listen, observe and learn from moment to moment if he is to direct and teach the other. True learning through tutoring might be likened to A.C. in electricity (an alternating current or flow of energy between two poles).

This co-operative study and work brings meaning, achievement and success. A confidence develops that soon finds the student trying new words alone -- before being prompted. Any sincere attempt at unsure words must be promptly reinforced by the correct pronunciation. If no response is attempted in several seconds, the tutor must furnish the appropriate word before the thought of the phrase is lost. Repeating the phrase or even the sentence is many times essential for complete comprehension.

After a short page, a long paragraph or even a short booklet is orally read, it is wise to relax the eyes with the paperback turned over. The new i.t.a. symbols require the work of genuine visual discrimination as well as the sharpening of auditory discrimination.

As we rest momentarily, the student is asked to recall, in his own words, the simple gist of what he has just read. At these first "joint encounters in reading" with i.t.a. booklets, there invariably comes the little thrill of success. Now, each student is privileged to autograph and date the one or more booklets (on the inside back cover) that he has read on that "first day". Such reading success only begets more success in reading.

## VI

## What is So Special About These i.t.a. Booklets?

Let us now turn to those i.t.a. booklets that make such tutoring possible. Of the four or five dozen paperbacks published in i.t.a., our newly motivated "readers" were especially attracted to about sixteen booklets. These appealed to the new student for various reasons that should be analyzed.*

First, there was sort of a "recreational reading" presentation of the i.t.a. editions in their arrangement on a special library table. Students were asked to select "another" booklet to read and then autograph. Of the twenty-two readers who got their reading start from i.t.a. booklets, all read orally to the tutor and autographed from seventeen to twenty-four different paperbacks.

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* These 16 i.t.a. editions are listed after the references.

This usually took place in the first half year of tutoring. Some boys took less time and went on to "Reading Development", i.e., individual projects that are carried out in traditional orthography. However, these "post i.t.a." activities utilize paperback-type books and workbooks.

## VII

## Is The Physical Make-Up of Booklets Important?

First, we cannot ignore the bold colorful cartoon type covers. The horizontal layout of the 6 x 8 inch booklets proved more popular than the traditional vertical arrangement of the 7½ x 9 inch paperbacks. Most booklets averaged about thirty-two pages, with the range being from sixteen to eighty pages. Practically every page was illustrated in line drawings with the copy incorporated within the page design.

The copy was arranged with one to six lines per page. When paragraphs were used, they were five lines or less. Almost all booklets averaged from ten to twenty words per page on the first five pages. There was no obvious attempt to limit vocabulary as evidenced in so many primary readers. All booklets were rated at first, second or third grade reading level.

Size of type was always larger than "Pica" in the printing of these paperbacks. Black ink was used even though the illustrations were often printed in another light color.

## VIII

## Who Are The Artists and What Themes Are Employed?

These booklets are many times the creations of author-artists who have become popular with the American public through comic series. Each is often specifically dedicated to those individuals (usually young people) who have inspired them.

The subject matter of these i.t.a. booklets mostly concerns present day situations. Of the ten most popular paperbacks chosen, all but two deal with youngsters and their pets. Many times the pet is the hero with the master facing some dilemma filled with suspense and humor. Like modern Aesop's Fables, there is a moral to the story like the values and virtues of curiosity and caution, patience and bravery, playing and working together, being a friend, etc.

## IX

## Some Personal Conclusions

This reporter has attempted to describe the twenty-two "non-readers" who started "reading" with i.t.a. booklets in small group tutoring situations. A few conclusions might be drawn from the material presented:

1. i.t.a. booklets can be a valuable remedial reading aid because they create a confidence in the student's ability to decode (and consequently read) the English Language.

2. This confidence is possible because there is a logical one-to-one relationship between the forty-four i.t.a. characters and their forty-four phonemes.

3. Reading success with the simplified i.t.a. orthography is a basis for further success in traditional orthography. Why? Because the

reader senses no problem in substituting several already known characters (T.O.) for a single known character (i.t.a.) and its single phoneme.

4. The value of the i.t.a. booklets is largely dependent upon the tutor's ability to learn quickly from each "non-reader" and also to provide an oral pattern that can be imitated readily with comprehension.

5. The continued development of reading with the "ex non-reader" will be expedited when the "new-reader" accepts some responsibility of an "each one teach one" philosophy with his peers (Medary, 1954). Such concern for the "new or older" student builds a motivation that can be contagious and will "spark" a small group into further reading activity.

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THE SIXTEEN MOST WIDELY UTILIZED I.T.A. BOOKLETS
(Listed in the order of their popularity)

1. **Bird in the Hat,* Norman Bridwell (Story and Pictures)
2. **Clifford, The Big Red Dog,* Norman Bridwell (Story and Pictures)
3. **Curious George,* H. A. Rey (Story and Pictures)
4. **The Mighty Hunter,* Berta & Elmer Hader (Story and Pictures)
5. **Barney's Adventure,* Margot Austin (Story and Pictures)
6. **Indian Two Feet and His Horse,* Margaret Friskey (Pictures by Ezra Jack Keats)
7. *Zany Zoo,* Norman Bridwell (Story and Pictures)
8. **The Little Fish That Got Away,* Bernadine Cook, (pictures by Crockett Johnson)
9. *The Biggest Bear,* Lynd Ward (Pictures, also)
10. **The Curious Cow,* Esther K. Meeks (Pictures by Mel Pekarsky)
11. **What Do You Say, Dear?* Sesyle Joslin (Pictures by Maurice Sendak)
12. *Is This You?* Ruth Krauss (Pictures by Crockett Johnson)
13. **Clifford Gets a Job,* Normal Bridwell (Story and Pictures)
14. *"I Can't," Said The Ant,* Polly Cameron (Story and Pictures)
15. *Brave Daniel,* Leonore Klein (Pictures by John Fischetti)
16. *The Adventures of the Three Blind Mice,* John W. Ivimey (Pictures by Nola Langner)

* Asterisk indicates those ten paperbacks found most useful in the "initial" tutoring of the "non-reader".

## 3. THE MISSOURI ADULT VOCATIONAL LITERACY PROJECT

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In April 1965 the University of Missouri contracted with the United States Office of Health, Education, and Welfare under provisions of the Vocational Education Act of 1963 to construct series of materials through which reading, spelling, and handwriting could be taught to adult illiterates. The project began June 1, 1965 and terminated December 1, 1966 with a supplementary extension to August 31, 1967 to permit limited field trials with the materials.

The proposal that we submitted provided for two innovative features. First, was the use of adult-oriented content. Unless adult learners are highly motivated to learn to read, we knew that stories for six and seven year-olds would have little intrinsic appeal. Subsequent studies of adult interests showed that their concerns were with the world of work, social security, insurance, auto purchasing, family problems, child care, and the like. The development of themes such as these into reading content would accomplish two ends. It would provide the medium through which the pupil could learn to read, write, and spell, and second, it would provide useful and significant information, thus providing for both growth *in* and growth *through* reading.

The second innovative feature was to introduce the reading process through the medium of the initial teaching alphabet. If the lack of point-to-point relationship between sound and symbol is a deterrent to the learning of young children, as research seems to indicate, we assumed that it would be equally true for adults. Since some studies were beginning to show that the simulated alphabet was proving effective in the teaching of the six year-old, we thought it worthy of a trial with the older learner.

Our blueprint for the materials, *Language for a Future,* called for a basic program organized on three levels, and an intermediate program also of three levels, six levels in all. Level I of the basic program, the *initial teaching level* was designed to initiate the reading process and to introduce and teach the 44-symbol initial teaching alphabet. Level II, a *plateau level,* was designed to develop fluency in the reading of i.t.a. content. Level III, the *transition level,* provided for the transfer of i.t.a. to content written in the conventional manner. These three levels, incorporated into three 8½x11", spiral bound teaching workbooks, were designed for one hundred hours of instruction. In addition to the reading content, the pages provided for instruction in handwriting and spelling. Each of these books was accompanied by a detailed teachers' manual.

Levels IV, V and VI of the *Language for a Future* program were designed to develop proficiency in reading T.O. content on increasingly higher levels of difficulty. The content continued the strong vocational emphasis, but included, in addition, such topics as the importance of an education, the vocational rehabilitation program, the history of communication, the railroad industry, aviation, and the organization of the departments of government. These topics, I might add, were chosen on the basis of interests as indicated through interviews with students and teachers of literary classes in Detroit, Chicago, St. Louis, and the rural areas of Southeast Missouri.

Also beginning with Level IV and graded in difficulty were nine supplementary occupational books dealing with vocations about which the vocational trainee might desire information. These booklets went under such titles as, *So You Want to Be a Waitress; So You Want to Be a Service Station Attendant*, etc. These books are designed to provide basic information about various occupations, and, at the same time, to give additional opportunity to develop fluency in reading.

Several unique features were built into the program. The first had to do with our provision for transfer from i.t.a. to T.O. We started the process very early in the program, with story five, in fact. On the left-hand side of the page the content was in i.t.a.; on the facing page the same content was in T.O. There was no intent to have the facing page in T.O. read by the students. We had learned through preliminary try-outs that adults were fearful that the "new alphabet" may be so different from the one used in signs and newspapers that their ability to read would be of little value to them. We wanted to be able to show them early that many of the words were either identical or similar in both i.t.a. and T.O. and that their apprehension could be allayed. Further on in Level I, as the students gained confidence in their newly developed skill, they were encouraged to turn back to the earlier, very easy content and try to read it in the T.O. version.

On Level II, the fluency level, the story content became longer. T.O. pages were continued and instructions were given in the teacher's manual to have the learner try reading the T.O. story immediately after reading the i.t.a. Since the i.t.a. version was fresh in mind, the learner could carry the newly learned words over into the T.O. material. As he proceeded further with Level II, the manual suggested that the learner return to earlier stories and read them in T.O. through delayed recall. Gradually we were trying to build up confidence in the use of the conventional typography.

In the first half of Level III, the transition level, all content was written in T.O. while the same story appeared on following pages in i.t.a. Here our learners were encouraged to read the T.O. first, using the i.t.a. as a crutch only when necessary. The second half of Level III differed from the first in that the i.t.a. pages were discontinued, but at the bottom of each T.O. page the new words with which the learner might have difficulty were printed in i.t.a. to be used as aids when necessary. On Levels IV, V, and VI all new words were shown in i.t.a. at the end of each book. Thus, we could say, in a sense, that transfer was built into the program from the beginning.

Another special feature of the program had to do with handwriting. Each lesson in Level I introduced for writing the same i.t.a. characters for which we were developing the sound-symbol relationship in the reading lesson. Thus we were not only teaching the student a letter-formation skill, but we were, at the same time, kinesthetically reinforcing the sound-symbol learning process. The learner *heard* a given sound, he *saw* the character that represented that sound, he *wrote* that character.

On Level II the learner combined his letters to form words and to memorize their serial order as spelling. We taught as spelling words, however, only those words where the i.t.a. and the T.O. version were identical or nearly the same (we used only the digraphs wh, th, and th ). We felt that in this intensive program little purpose would be served in teaching the i.t.a. spelling of a given word when its spelling would very soon have to be unlearned and relearned in T.O. Throughout we used the manuscript alphabet. Research shows that with children, no major purpose is served in writing cursively a process demanding a much higher level of motor performance. We assumed the same would be the case with adults.

We were particularly concerned with the development of auditory perception and discrimination since it is obvious that the success of this program is due, in part, to the ability of the learner to be sensitive to sounds in the spoken language, since the characters he sees must stand for those sounds. Exercises are included in the manual of various types calling for the identification of words that rhyme other words, that begin with the same sound, words that begin with different sounds, etc. In spite of our efforts to include what we thought would be ample exercises of these types, we discovered that students of the kind we were dealing with still needed far more work in ear training. Most adults seem insensitive to the world of spoken sounds.

Throughout the initial stage we developed the sound-symbol relationship in an inductive manner. That is, we taught sight words, and after we had introduced a sufficient number that began with the same pattern, (b = Bill, Bates, building, big) or that contained the element we wished to teach, the name and sound of that element were taught in combination, but generalized from known sight words.

We learned also from talking with teachers and directors of adult programs that it was a necessity to build a manual or teacher's guide that would detail the teaching directions. "Put the words in the teacher's mouth," one supervisor told us. Unfortunately many of the adult teachers are untrained - certainly in the use of i.t.a. and almost equally in the teaching of reading. Many labor under the assumption that because they can read, they can teach others to read which is a fallacious assumption for any reading teacher to make. So we have provided a detailed instructional manual, one for each of the first three levels and one for the last three levels. The manual indicates the new words to be taught, the words that may be unlocked with the word perception skills already taught, the word perception skills to be introduced or reviewed, suggested questions to be used to check comprehension and to elicit discussion, teaching suggestions, word building patterns, and words to be taught for spelling.

We have not been unaware of some sound linguistic ideas that might be used to develop independence in reading. These were not original with us, since some reading programs have included them for years. I refer to the teaching of word patterns. That is, when *glad* had been taught, for example, we showed the students how other words could be built by omitting the initial element and adding other consonant characters. From *glad,* then, we get *bad, lad, mad, fad,* and *pad*. This is a technique that we used through the series.

You will be interested in the results of our try-out with the materials. I wish I could report results obtained from large numbers of students, of various ages, intelligence categories, in various sections of the country and representatives of various ethnic groups. In our original proposal we had indicated plans for a program of teacher training and extensive field trials, but unfortunately funds were not available for these activities. Even with our very modest trials we found it extremely difficult to find groups of adults sufficiently motivated to be willing to give of their time and effort to engage in a language program. Many, we discovered, were self-conscious of their deficiency and they were fearful that their friends and neighbors would discover that they were unable to read and write.

We were able, however, to get three groups together for an instructional period covering a semester. The first, a "*C*" group, of six with ages of 42 to 70 and estimated IQ's of 62 to 89. The second, a "*J*" group of five with ages of 24 to 48 and estimated IQ's of 54 to 81, and a "*P*" group of seven ages 34 to 54, and IQ's 56 to 87. The latter group was made up of inmates in a medium security prison. The first group was able only to get midway through Level II in 25 hours of intruction; group "*J*" completed all three levels in one hundred hours of instruction, and "*P*" group in 75 hours of instruction completed half of Level III. Students were pre- and post-tested with the Primary II Battery of the Stanford Achievement Test. With the exception of spelling, differences between the two measures in word meaning, paragraph meaning, and word study skills were significant at the .05 level in the *C* and *P* groups. None of the differences in the *J* group was significant. It should be pointed out, however, that this group was taught by a young man who had no experience in teaching or in teaching reading.

As a summary you will be interested in the conclusions and recommendations made by those who participated in these limited field trials.

1. The simultaneous presentation of content in both i.t.a. and T.O. appears to facilitate transfer.
2. The vocabulary load and the rate of presentation of new words presented no problem.
3. The content seems to be particularly good. Student comments were favorable and the stories stimulated pupil initiated extended discussion.
4. The one-hundred hours of instruction projected for the first three levels are much too short.
5. There is strong evidence that the i.t.a. medium is a disadvantage to learners who are already reading in T.O., even in a limited manner.
6. Teacher training is essential to successful teaching of reading, particularly as this program is constructed.
7. The teacher's manual seems adequate but needs some minor revisions.
8. The teaching manual must emphasize the fact that directives to instructional procedures outlined must be tempered by the fact that adults vary in terms of needs, learning rates, and interests in the same manner as children.
9. More work on auditory discrimination needs to be included. The well established speech habits of adults seemingly makes them insensitive to the sounds of spoken language.
10. Adults of the type we were dealing have difficulty in understanding and following directions. The manual must give more specific directions and suggested supervised trial exercises before permitting students to work independently.
11. It would be unrealistic to assume that all adults were motivated to learn to read because of the "new alphabet." Students were as much intrigued by the adult oriented content and stimulated by feelings of worth and satisfaction arising from the acquisition of an important ability as by the new medium.

## 4. I.T.A. - THE MARGINAL MAN AND MILITARY SERVICE

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Every man is marginal - most of us are marginal for some things and for most things some of us are marginal.

I would, therefore, like to clarify immediately the exact context in which I am now using this term.

The marginal man, for the purpose of this paper, is one who, when accepted as a recruit by the British Army, has an educational standard which is insufficient to enable him to obtain the maximum benefit from his normal military training.

In order to fulfil its many and varied commitments it is necessary for our Army to accept such men and, overall, some 10% of recruits come within this category and most of these are infantrymen.

The School of Preliminary Education exists specifically to cater to this type of soldier; exists, therefore, to assist in making soldiers of men who would otherwise be unacceptable.

The School is a unique establishment. There is no comparable civilian institution where an average of 170 resident adults are undergoing full-time remedial educational instruction. Whilst, therefore, the unit is an integral part of the training organization of the Army the work has an undoubted welfare and citizenship aspect.

Recruits are eligible for a course at SPE if their Reading Age is less than 11 years or if they have a significant weakness in number work. The mean Reading Age on arrival at the School is 10 years 3 months and all of these men, therefore, come within the Ministry of Education classification of "backward" or non-effective readers. A better description I feel in the case of these adults is that they are socially incompetent readers.

Selection is carried out by the School and intakes of approximately 34 students assemble every fortnight. Every intake is divided into 2 classes, each with its own officer instructor who remains with that particular group for the whole of the 10½ week course. The success or failure of the course hinges on this intimate officer/student relationship.

The weekly timetable includes periods of drill, physical education, games, religious instruction and hobbies. The amount of actual educational instruction is about 21 hours per week and for this there are no set syllabuses or standardized lessons. The way in which this time is utilized depends entirely upon the individual instructor who must create a flexible program dependent upon the needs, attitude and rate of progress of each member of his particular group.

In a majority of cases these men suffer to a greater or lesser degree from a sense of failure, frustration and a lack of self-confidence. They come, generally, from socially and culturally poor and deprived homes. Most of them are from the unskilled labouring classes and the average size of family is more than six children. About 35% of students are from 'broken' homes (i.e. where there has been a death of one or both parents, a divorce, separation or where there are no known parents) and the majority of them suffer from some form of emotional disorder.

It must be obvious to you, therefore, that these men have much in common with those whom you classify here in North America as 'drop-outs'. I do not propose, therefore, to examine in further detail the many and varied educational and environmental factors which have produced our marginal man since you are all well aware of these acute problems.

I do, however, want to discuss in detail one particular group of students -- the bottom 10% of our population whose Reading Age is 8 years or less who present our greatest challenge; the students whose morale is the lowest and who are likely to have the greatest antipathy towards education. It is with such men that we have been experimenting with the initial teaching alphabet for some 3½ years.

This group represents the despondent cases of reading failure who urgently require a *new* approach; a medium which is not immediately inhibited by the psychological barrier of reactivated feelings of failure, frustration and mistrust.

It is with this group that we have found the initial teaching alphabet has provided the impetus for the motivation required and has greatly reduced the difficulties encountered by these men since it has:

a. a complete stability of visual pattern (i.e. it is wholly lower case);

b. the simplest form of sound/symbol relationship;

c. made possible an appreciable reduction in the alternative spellings for the basic sounds of the English language. The backward or partly successful reader is, of course, already familiar with 24 of the 44 characters.

In the course of my work I attend many lectures, conferences, teacher refresher courses, etc., and as a result of my experiences I would, before discussing the impact of this medium in our particular environment, like to put to you what I regard as a highly significant question:

> "Are we merely trying to teach people to read or are we trying to assist the learning process; to create attitudes, personal and social, which will have a favourable influence on their lives?"

I have the temerity to suggest that far too much attention is paid to the former and very little to the latter. There is an obsession with methodology and programs to the detriment of what I consider to be the two vital and fundamental issues involved in the social rehabilitation of the backward reader, viz communication (both receptive and emissive) and attitude.

I stated earlier my preference for the term socially incompetent readers and I think that this does place the necessary emphasis on this lack of ability in the skills required in the communication necessary in our daily lives. The general cultural impoverishment which has surrounded the majority of these men's lives has had a particularly detrimental effect upon achievement in language and, in consequence, on the full development of intelligence and personality.

It is surely the human aspect of this situation which is of paramount importance; the fact that a grown man cannot obtain the satisfaction of translating a page of printed symbols into simple sense and that he is unable to release effectively, particularly on paper, any feelings which surge within him. Such a man is forced against all his natural instincts into all the frustration besetting one attempting to be "an island, entire of itself".

You will all appreciate that 10½ weeks is but little time in which to alleviate the interwoven emotional and educational disabilities adequately. Added to the limitation imposed by time was the fact that a distaste for, and a fear of, writing is very common amongst such men and, as a result, we confined the initial stages of our experimentation with the i.t.a. to the improvement of reading.

This part of our program revealed two very significant findings. The first concerns the level of material which is acceptable to this type of man. We had always presupposed that these men would require exciting reading matter connected with war heroes, space travel, science fiction etc., and accordingly we produced our own material. We were somewhat shattered to find that they enjoyed any reading matter which they were able to master. It appears that what is vitally important in the early stages is not the *content* but a man's pleasure in his ability to turn a page having mastered 'the story so far'. It is the feeling of confidence and competence in handling the printed symbol. He is sufficiently satisfied in the achievement of success in reading and understanding, however apparently trivial the content, to be willing to practice his new-found ability regardless. Surely the enjoyment of the simplest stories is yet further proof of the depth of the early cultural deprivation, that deprivation of language experience at an early age when someone should have been *reading to him.*

The second important finding concerns that *bete noire* of the i.t.a., the period of transition. This has, unfortunately, become an obsession, and a highly emotional one, with some people - a thing to be declined in all its tenses as if it were a Latin verb, and which, I feel, surely leads to the same kind of psychological reaction as telling a person that he looks ill every day. At the end of six months he *feels* ill!

Our experience has shown that not only is the transition achieved without any difficulty and with little or no regression but that the students make the transfer in their own time when they feel themselves ready for the change -- it appears to be an almost unconscious act. In addition, the backward adult, as opposed to the infant learner, is constantly making the transition in his daily routine. Whilst the remedial study room is placarded with cartoons, with i.t.a. captions, "What's On" notices in i.t.a., they do see ordinary newspapers, magazines, letters from home, cinema hoardings, etc., so that they are, in fact, reading and improving in Traditional Orthography all the time that they are acquiring confidence and fluency in i.t.a. This is also witnessed by the familiarity with which they move from the i.t.a. to T.O. typewriter depending upon availability.

After some 3 years experimentation we were able to state that, in our particular situation, i.t.a. has a very important part to play in alleviating reading retardation in adults. A substantial contribution to its effectiveness is undoubtedly the early success rate which is achieved. The results far exceeded anything hitherto achieved at the School by conventional remedial methods.

Whereas the mean improvement in Reading Age for the whole School is just under 15 months the mean improvement of the 134 men who attended the i.t.a. reading group is 26 months. This compares very favourably with an improvement of 2/3 months before the introduction of i.t.a. in the remedial centre.

The figures are more interesting when the potential of the two groups is compared. The mean IQ of the School population is 82 but in the i.t.a. group 29% had an IQ below the scale minimum (i.e. 65) and the mean of the remainder but 73.

The use of an i.t.a. typewriter to produce our own early readers led us to experiment with its use by the students themselves. This aroused tremendous interest and as a result, in November 1966 the Educational Services of IBM kindly loaned two electric typewriters (an i.t.a. machine and a T.O. machine) and we have now been able to make a real evaluation of the impact of this medium on the student's ability to communicate thoughts, ideas and emotions through the written word. The significance of the electric machines is that they do, of course, always maintain the same clarity of reproduction irrespective of manual pressure. This, added to the fact that these machines do away with the minimal effort needed to work an ordinary typewriter, is particularly important in the early stages when the student's approach to the machine is somewhat tentative.

The effect of the i.t.a. machine has been startling and appears to have released all the urge for communication which has been bottled up in these men for so long. They are able for the first time in their lives to communicate with family and friends in an acceptable and legible form.

In the first instance it is this *act* of communication which is far more important than any technical efficiency and the backward will only aspire to greater technical efficiency when they can see that such efficiency contributes to more effective communication.

The typewriter has not only given them great technical efficiency but has shown this to be more effective in their social relationships! It also has the added attractions of novelty and the fact that it is a status symbol associated with the adult commercial world; that world which has hitherto remained quite unattainable.

The machine has given them tremendous confidence because the sound symbols are there to be seen; they do not have to be visualised and then painstakingly reproduced by hand from the visual image. The consequence is that we now have outpourings of free expression comparable to those which have been such an exciting feature of the Downing Experiment in Schools.

FIG. I

b. coy. s. p. e. bas
hill banacks
corsham
e wilts

my dear darling wife carmen

just a line to let you know thatii
am well darling i hope this letter will fied yφou the sæm to darling.

carmen you did not tell me if you think i have in pooft my ræding aadd rietin
i know that i have i suspect you think that sum one ωs is rietin this letter
for my but i am rietin this letter my slfe darling carmen this is the bwæ i
know that i am in poofing my slfe.

and you can see for your slfe carmen the
letter that i riet to you seem to dot longer and longer.

well my darling car-
mentthe tiem is near for you to be with me and i will be very gad to becus i
miss you mor and mor as eech day ɡœs by darling i am ail wæs thinking of you
know one ous but you my darling.

well carmen i have tow tell you a gen t
-at i miss you very much and i am waest for the tiem tow cum for your to be to
gether a gen it wœnt be much longer carling be for we will be to ɡetherω
carmen word you please send me sum money becus i have got just a few shillin
gs and i have to gat one ar two things.

wellc carmen i have to cum to
a end for to-day so god by with you.

carmen geth my love to dad and
i love you my darling
sister plead love from
terrance your
husbin

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Above is a reproduction of a letter by one of our married students. The man who is 25 years' old was a total illiterate 7½ weeks before writing this. He had come from overseas and was unable to make any legible contact with his wife whatsoever. By the end of his course he was writing her two letters per day in the T.O. medium of similar or greater length, and although he has now left is still engaged in writing a short book entitled "My Life Story" of which he has already completed 14 chapters. His sense of accomplishment and progress is enormous. Simple and logical tools changed this man from a depressed illiterate to a self-confident man able to express his feelings and personality through the written word. Page One of Chapter One is shown below and was produced after 10 weeks in the Remedial Centre.

FIG. 2

CHAPTER ONE

This is a True Story of a Sœldier

This Sœdiers **Name** is

He is a private Sœldier in the British army and he is Statined at the School of Preliminary Education Corsham Wilts and the reason that he is Stationed at School of Preliminary Education is because he did not know how to read all write which was no fault of his because he spent his Childhood in an Orphans Home and the Name of the Orphans Home is pewsey

Hospital. Itis near Marlborough which is where he was born.
This Sœldiers spent (fourteen) Years of his life at Pewsey Hospital
were he wus sent by his Mather wen he wus one year old because She wus
not married so She could not mange to look after him.
So he had to make his Home in the Orphans Home.
In the Orphans there were rooms for boys and~~g~~ gorls between the age of
one and four.

When they became four years of age they go to the boys
ward. Ther they had four rooms with (30) boys in each room mokiln-
gthr total (120) boys who he could play with.

Since typewriters became established as basic teaching tools in the Remedial Centre the mean improvement in Reading Age over a 10 week period has risen from 26 to 41 months. This considerable improvement is interesting since some of the criticisms frequently levelled at any experimentation with i.t.a., or any other new medium, is that the results are not valid due to emotional loading and the first flush of enthusiasm of the instructor.

The reason for this dramatic increase is undoubtedly due to the broadening of their vocabulary and language concepts as a result of their increased powers of communication. There has also been a significant carry-over of ability into the field of arithmetic. Although the group has concentrated almost entirely on communication, arithmetic results have improved in the same proportion as reading. This carry-over is to be expected in problem arithmetic where reading attainment has a direct bearing on the solution but it is remarkable that the same improvement should also be evident in mechanical arithmetic, concerned only with calculations.

However, impressive as the figures of improved attainment may appear - and is there not in this day and age a little too much emphasis on strictly academic improvement or attainment to the detriment of the education of the 'whole'? - the most significant effect to us is in the improvement in the general outlook of these students, in their self-confidence and in their increased self-respect. The new found confidence in their own ability to achieve success has had a marked effect upon their reaction not only to academic progress but also to each other. They have become more co-operative and less anti-social and, in consequence, as is confirmed by the reports of various Unit Commanders, they have become better men and more proficient soldiers.

## E. ENGLISH AS A SECOND LANGUAGE

For many, one of the most exciting uses for the initial teaching alphabet involves the possibility for using it to teach English as a second language. There is no question that, while English is a relatively easy spoken language as compared with most modern languages, its orthography and spelling rules make it an unusually difficult written language. Thus far, the i.t.a. Foundation is not aware of any formal research attempting to investigate the effectiveness of i.t.a. in teaching reading to either literate or non-literate non-English speaking persons. Most of the discussions of i.t.a. in this field have emphasized the potential value and some of the pitfalls which may be involved if i.t.a. is used to teach English as a second language. Further, with the exception of some material which has been prepared in World i.t.a. (Pitman, 1965) and some special materials prepared by Mr. James Larick (one of the authors of the papers in this section), no special instructional materials or methods have been developed to deal with this important educational problem.

Mr. Larick's paper is essentially a case study. His approach heavily emphasizes a simultaneous attack on reading, writing and speaking. Miss Marion Loring's paper represents a great deal of firsthand experience, and her suggestions will be interesting to others working in this field. Unfortunately, neither of the authors has had either the opportunity or the facilities to execute controlled research on a large scale.

In general, preliminary steps in dealing with an educational problem with a new approach are usually non-experimental in nature. This is quite appropriate. It would be uneconomical and unwise to design elaborate research projects until the "bugs" in a new system have been worked out in field trials. New and exciting materials have to be tried and experimented with on a subjective basis. Experimentation in a rigorously controlled setting at this early stage would be inappropriate. This, then, is the status of i.t.a. in the teaching of English as a second language. It offers an exciting challenge and opportunity for both development of materials and methods, and well conceived and conducted research.

The interested reader may wish to pursue some of the articles listed below which outline some of the possibilities and problems in dealing with i.t.a. in this important area.

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# 1. THE USE OF THE INITIAL TEACHING ALPHABET IN TEACHING ENGLISH AS A SECOND LANGUAGE TO SPEAKERS OF SPANISH

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The work with i.t.a. was undertaken over a three and one-half year period at Presbyterian Pan American School, and included work outside the school in an area extending some 50 miles around Kingsville, Texas.

To make clear the area worked in, we will rely on the definition by Lado of *second language*. He says, ".....a second language....(is) a nonnative language taught or learned for national communication." *

And, as for "standard methods", we refer to those methods or techniques grouped under the heading of "direct" methods, as opposed to the translation, or "traditional" type of language learning. As John B. Carroll describes it, the direct method is

> ...based on the scientific study of language in which the approach is *initially* through *form* rather than meaning. It emphasizes speech before writing; it frequently entails the use of a native informant as a model, of correct speech; it allows the teacher to use the learner's native language (but only for explanations of the phonology, grammar, and lexicon of the target language); it stresses the importance of drill and repetition to achieve over-learning of habits; and to identify the problems which will most tax the learner, it involves a careful linguistic analysis of the similarities and differences of the learner's native language and the target language. **

## Who Were Those Taught?

There were two groups who studied English as a second language. The first group were boys and girls from Mexico, and Central and South America. All were literate speakers of Spanish. Each was a graduate of secondary school in his own country and ranged in age from 14 to 21 years of age. They studied English as a second language at Pan American on an intensive basis so they could attend school in the United States where the normal classroom language would be English.

The second group of more than 60 adults constituted two distinct problems. One segment were those from Mexico who had had minimal educational achievement there -- rarely beyond *quinto*, or the fifth grade (roughly equivalent to the sixth year of school in the United States if we use the class content material as the deciding factor).

The other segment of this second group were Mexican-Americans who spoke Spanish as their first language and English poorly. The students of this second group would be classified as functional illiterates in either language.

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* Lado (1964)

** Carroll (1960)

## The Methods

It is a more-or-less standard practice in teaching English as a second language by one or another of the direct methods to assign the first, and often major, portion of the course to speaking, without reference to writing or reading. Only later -- in fact Step 7, according to Lado -- is the student introduced to reading and writing in English.

English is a relatively easy language to learn to speak and can be accomplished in a very reasonable length of time. It is with the hell of mastering written English, especially by those literate in another language using the Latin alphabet, that the real problems arise. Mother tongue interference arises, and this in turn gives full play to fears arising from the student's desire to please the teacher and accomplish his goal.

It is here that the Initial Teaching Alphabet gives us a solution, for by using i.t.a., we found we could introduce the students to the written symbols simultaneously with the spoken utterance.

On our introduction to i.t.a. in 1964, we began to meld the two skills into the initial efforts of the course. Reading and writing began at the same time as speaking. The initial advantage we found in 1964 was broadened and strengthened until, in 1965, we were able to reduce the total classhours by one-half, while maintaining equivalent high scores on various English Language Institute tests.

Astounded by all this, in 1966 we translated all materials having to do with basic communications English from T.O. into i.t.a., and found that the students were largely teaching themselves. Even that material still in T.O. was consumed rapidly, all the while the students used i.t.a. as a pronunciation referrent.

The acceleration of learning was somewhat dramatic.....the drain on materials was tremendous. In three years, since beginning to work with the Initial Teaching Alphabet, some 1,300 pages of materials were prepared.

As for the transition to T.O., there were no problems. The students simply went ahead at their accelerated rate. When there was lingual interference, the student and his instructor conferred, using i.t.a. as the clarifying agent.

Undoubtedly as more material becomes available in World i.t.a. for the teaching of English as a second language, we will encounter even greater acceleration. What little materials we did encounter in World i.t.a. proved most helpful.

## As Things Now Stand

As things now stand, the students in the early and intermediate stages of learning English as a second language who use i.t.a. as a learning tool, read from the start with near normal intonation and inflection, as well as controlling English morphemes without problems.

In addition, much of the conscious and unconscious translating usually indulged in while working for a co-ordinate control of English is bypassed. We must gather that there is not only a minimization of mother tongue interference, but also other factors which hasten the mastering of English as a second language. Just what happens remains to be studied and investigated on a more controlled basis, but we do know that whatever it is affects the entire learning ability of the student.

It seems evident to us that i.t.a., directly or indirectly, is involved with much more than phonology. We have noted that, even two years after their introduction to i.t.a., many students still use it when in stress situations, even though they are perfectly capable of reading, writing, speaking, hearing and understanding English at the eleventh or twelfth grade level. It seems that the early element of security allowed by i.t.a. serves to enhance the student's total learning attitude in ways not fully understood.

Summary

I have not -- in fact, could not -- even begin to list all the "how-do-you-do-it" factors in using i.t.a. in teaching English as a Second Language. It would be impossible.

Instead, let me list only a few things we have concluded in using the Initial Teaching Alphabet in teaching English as a second language:

a. i.t.a. allows the introduction of all elements (reading, writing, hearing, speaking and understanding) of English from the very beginning.

b. This totality of presentation allows an acceleration of learning due possibly to the maximum contact involved.

c. i.t.a. largely minimizes phonic problems of English for the student who has Spanish as a first language.

d. i.t.a. minimizes lingual interference.

e. i.t.a. helps minimize the fear element and instills early and continuing confidence in the student.

What of i.t.a.-E.A.S.L. and the Future?

We need, badly, some sort of proving-ground for i.t.a.-E.A.S.L. I believe that there must be constructed new curriculum for much of the population of the United States -- even the world -- which will be based on better teaching English to non-English speakers. I have no doubt that the augmented alphabet that is i.t.a. must be an inherent part of this curriculum study.

Why?

If for no other reason than personal knowledge of the geographical area where I work, it can be pointed out that officials estimate a drop-out rate of 75 percent* at the sixth-grade level of students with Spanish surnames. The Spanish surname population is 64 percent** of the total population in such areas.

To a large degree, the problem can be expressed in one word, *English!*

To begin work toward what may be a solution, some of us are beginning a program at St. Paul's Episcopal School, in Brownsville, Texas, which we hope will begin a number of reforms.

Initially, the school will be for three to six year old children, and will be a bilingual school. Spanish and English will be taught to all children. One of the important tools we propose using will be World i.t.a. for teaching English as a second language to four and five year-old children. This may turn out to be a long project, and possibly difficult, but it is something that must be done.

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* Rubel (1966)
** Cameron County (1966)

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## 2. ENGLISH AS A SECOND LANGUAGE

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Most books on English as a second language discuss it from the point of view of the older pupils but there are now many small children who go to school for the first time and have to start doing all their lessons in English when they do not understand it. We need to think a little about these children's problems.

Any little child going into a school the first time has a lot of adaptation to do; he has to learn a way of life. But these children, as well as experiencing the ordinary difficulties, find that their teacher is speaking in a language they do not understand. When she tells him what to do, he doesn't know what she means. Very often the pictures are incomprehensible also; either because they are all of a different background or because he is not accustomed to understanding pictures. So his difficulties are doubled and we need to do everything we can to make his work easier for him.

Now, I first got interested in i.t.a. because I saw something of these children's difficulties when I was doing a tour of West Africa, observing reading classes in many different countries. In most African schools where English is taught, the children start to learn reading in the vernacular, but they learn the English names of the letters.

So I got permission to try i.t.a. in two classes of six-year-old Nigerian children. I taught half-time in each class. In Class A I was using the Phonetic Approach. In Class B I was teaching with Look-Say. In Class A, I started teaching phonetics by associating the sounds with animal noises, as even when they didn't understand English, they could understand these. The children enjoyed this and got the idea of the sounds of the letters quite easily, but there was not very much transfer to reading. Only the bright ones seemed to be able to transfer this knowledge easily to their books.

In Class B I started with the *Janet and John* series and though teaching phonetics a little in the writing lesson, I didn't teach it systematically until half way through the year.

At the end of the year I gave the Schonell Reading Test to these two classes and to the third class which was taught by a native teacher using T.O.

We see from Table I that the average for Class A was the best, but that average was pushed up by the two pupils who got very high marks. We can notice also that in Class A there is a larger proportion of children who could hardly read at all. The majority of children in Class B could read the words they had been taught and attack successfully a few other words.

It is sometimes thought that because i.t.a. is a phonetic system, therefore it must be taught phonetically, but I would like to stress that it is a medium, not a method; and that the method should be in accordance with the children's needs. My experience is that the children generally understand better when they can *start* with live words, but that different children require different methods.

When I was teaching in East Prairie in a little Metis colony, I had only six Grade One pupils, but among that six I found three who showed a marked dif-

## TABLE I

## RESULTS ON SCHONELL READING TEST

| | Township School | Port Harcourt | Nigeria |
|---|---|---|---|
| No. of Words | Class A (Phonetic Approach) | Class B (Look-Say) | Class C T.O. |
| 0 - 2 | 16 | 9 | 22 |
| 3 - 6 | 11 | 21 | 22 |
| 7 - 10 | 7 | 14 | |
| 11 - 26 | 6 | 5 | |
| 50 & 76 | 2 | | |
| Mean | 8.5 | 6.1 | 2.6 |

ference in their approach.

One of them had difficulty in perceiving whole patterns; he definitely favored the phonetic method. Though this made him a slow beginner, he became a very good little reader. The second favored a sentence method, she would connect a picture with a sentence about it. She may have heard her older sister saying these sentences, but regardless of the reason, it was evident that this was her favorite approach. But the third child had a great difficulty with sentences. She was a "word caller". When I tried to get her to say a whole sentence, she would tie herself in knots, often getting her words in the wrong order and becoming very confused.

Here then, we have three children who needed different methods. We must always try to use varied approaches, and find out which suit different groups. I believe there is now a Learning Methods Test that can be given to beginners.

However, there were two particular methods that I found useful because they could be used with the whole class and appeal to these different children. One was the picture sentence method, which has several advantages.

First, children who don't know much English can learn just to point to the pictures and be learning their vocabulary; even the slow children can do this. The average children will be learning the sentences and even if they don't really read the words, they may be absorbing them into their speech patterns. The bright children may really **read** the small words. These sentences give children a sense of mastery and comprehension more quickly than the conventional books.

The second method is the use of alliterative sentences or phrases. The advantage of this is that as they are repeated by the whole class, the children are learning an English sentence applied to a particular picture. At the same time some will be learning the phonics by observing the same sound repeated - and the same letter showing up. This has the added advantage of showing that a particular letter may come in several different words. For if phonics is taught by associating a letter with one word or picture, children sometimes think that the letter *is* the word; when doing it in a sentence, this danger is avoided. The brighter children may learn at the same time to recognize some of the individual words.

Now one of the things we have to take for granted is that in many of the backward countries these children who need very good teachers, often get the poorest teachers, who have large classes where a mass method has to be used. These picture sentences can be used with a whole class together.

I cannot say very much about creative writing in the Nigerian school because the children did not know enough English to be able to do much. But in East Prairie where the Metis children heard quite a lot of English, they became very fluent. I considered that one of the most important advantages of i.t.a. These children were very shy and spoke little, but expressed themselves well in their own background.

Moreover when children can do their own writing, the teacher can diagnose their speech errors, for usually their spelling errors are due to speech errors.

Another advantage of i.t.a. is that it can be a help to the teacher who does not know much English herself. If we can just teach these inexperienced teachers the 44 sounds efficiently she should be able to teach the words that these little children need to know.

Then the bright children can go on and learn for themselves.

I would like to see many more texts, workbooks and programs, by which children could learn English and other subjects *through* i.t.a.

To summarize the particular advantages of i.t.a. in these situations:

1. i.t.a. causes less confusion with vernacular.

2. it is a guide to teachers who don't know much English.

3. it enables the bright child to advance by himself, even if the teacher cannot help him.

4. it teaches better pronounciation.

5. it enables the teacher to diagnose speech errors.

6. it helps us to understand the child's thoughts and background.

7. it enables the child to get a mastery of English through the written word.

For the sake of these small children who experience such difficulties I hope that i.t.a. will be used more extensively in their schools.

## PART IV - METHODS AND MEASURES

This section of the proceedings of the Fourth International i.t.a. Conference deals with an unusually broad range of problems. As has been noted elsewhere in this volume, i.t.a. is a relatively new educational tool. At the same time, it has had a remarkable degree of diffusion throughout the educational community. This almost incongruous combination of youth and breadth of experience represents one of i.t.a.'s strengths and its weaknesses. Its rapid diffusion and general level of success thus far reflects the fact that the majority of studies have shown that there are significant advantages to be gained in the use of this medium. In a very short period of time, it has been used in a wide array of educational contexts as evidenced by the range of papers presented at this conference. At the same time, however, it would appear reasonable that different educational contexts may have different requirements.

It is quite remarkable that, although there are a great many i.t.a. books from which an educator may choose, the great majority of these are transliterations which already were available in T.O., which made educational assumptions inherent in this medium. Only a relatively small number of books have been written in i.t.a. to utilize its unique features. As noted in the section dealing with special groups, few i.t.a. materials have been prepared to deal with particular educational sub-groups.

This section deals with papers presented by persons broadly experienced with i.t.a. They attempt to give the reader some insight with regard to methods of teaching, the transition from i.t.a. to T.O., the role of i.t.a. in promoting linguistic development and writing skill, and finally, the administrative problems involved in the consideration of the use of i.t.a. within a school system.

## A. TEACHING METHODS

The three papers in this section are quite different from one another. From the point of view of this author; this is as it should be. As an *alphabet*, i.t.a. should be able to be used effectively with a number of methods. It has been frequently noted that much of the research in i.t.a. attempting to compare its effectiveness with a "phonic method," or teaching reading, or a "look-say" method has failed to understand the basic concept that i.t.a. is not a method, but a tool. Questions as to whether or not i.t.a. is better than a "phonic method", "programmed instruction" or "educational T.V." simply do not make sense. While it is possible that i.t.a. may lend itself to certain procedures more readily than to others, the type of research question which must be asked to evaluate i.t.a. should focus on its use *with* not *as* a method. Thus, we should properly ask such questions as: Is programmed instruction better with i.t.a. or T.O.? Or, is a phonic approach more effective when i.t.a. is used as the medium of communication? Thus far, there has been little focus upon the most effective *way* to use i.t.a.

The paper by Dr. Vera Ohanian represents her analysis of the methods for teaching reading with i.t.a. utilized in a particular reading series. Her paper emphasizes the fact that, in almost all educational research and practice, one deals with a total package including materials, methods, concepts, settings, etc. It is only in very limited laboratory studies that one is able to isolate the role of a single factor. Even if one were to use such a laboratory approach, once the impact of a single factor has been adequately identified, there always remains the question of how it may interact with each of a number of other independent factors. As a medium, i.t.a. cannot be divorced from the educational context and materials in which it is used.

The paper by Dr. Lura Carrithers points out the historical failures "of both phonic and look-say methods when used with T.O." Similarly, Dr. Ohanian's paper notes that the early synthetic phonic approaches may have failed because the medium did not lend itself *meaningfully* to this approach. She emphasizes that what we *know* about reading (and for that matter writing) must be re-examined as a function of the characteristics of i.t.a. Her analysis suggests that many of the "facts" generally accepted about the teaching of reading, which were evolved from research studies using T.O. materials, should now be re-examined with i.t.a.

The final paper in this series by Mrs. Elaine Bruner is interesting because her educational methods make use of i.t.a., but are not dependent upon it. There can be no better evidence of the educational community's understanding i.t.a. than the fact that it is being used in such projects. Consistent with a theme which runs throughout many of the papers in this volume, Mrs. Bruner suggests that special materials are needed for special purposes and she discusses some which she is developing.

## 1. THE RATIONALE FOR THE PROGRAM IN EARLY-TO-READ: THE INFLUENCE OF MEDIUM ON METHOD

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The need to explore the rationale for the American i.t.a. program was indicated recently in an article entitled, "What's Wrong with i.t.a.?" (Downing, 1967). On that occasion the i.t.a. materials, *Early-To-Read*, indirectly referred to as the American "package deal," was cited. The American program was woefully misrepresented and rejected. Misconception after misconception was expressed about the program prescribed for and conducted in i.t.a. experimental classes. These misinterpretations, among others, concern (1) i.t.a.'s affiliation with predominantly *one* method of teaching, a synthetic-phonic approach, (2) the source and nature of the phonics program, (3) the role of sight words and vocabulary control, (4) the function of guided discovery and reception learning of phonic cues, (5) the scheduled time of transition, and (6) the widespread, almost exclusive, use of *Early-To-Read* in i.t.a. experimentation in the United States.

The misrepresentation of and objection to the American i.t.a. program must result, in part, from gross misunderstandings. Therefore, the misconceived areas designated above will be explored. First, a brief but realistic description of the program, as recommended and as applied in, at least, one experimental center, will be presented. Further clarification will be achieved through identifying the rationale of the American i.t.a. program. The underlying support, both logical and empirical, will be ferreted out and stated explicitly.

It will become apparent that the American i.t.a. program is neither capricious nor borrowed. It is, in fact, a very neat "package deal" with sound, innovative features, logically conceived and founded on existing empirical data. The underlying and unifying logic is derived from the influence of medium on method, consistently applied. That is, the purpose for which i.t.a. was designed by Sir James Pitman is superbly capitalized in its formulation.

i.t.a. was devised to provide a more stable and reliable medium in the beginning stages of learning to read. Sir James' extended alphabet results from the conviction that difficulties in learning to read are caused by the imperfect and inconsistent representation of the forty phonemes of English by the twenty-six characters of the Roman alphabet. i.t.a., on the other hand, through its augmentations provides a more equitable correspondence between phoneme and grapheme. The prime purpose for which i.t.a. was designed, to serve as an initial, more consistent and invariable medium, functions as a constant determinant in choices regarding the features of *Early-To-Read*.

The influence of medium on program is suitably exercised with regard to the selection of the method of teaching prescribed in *Early-To-Read*. Yet, the American i.t.a. program has been found wanting for its affiliation with chiefly "one method of teaching." Such a view is ill-conceived and contradictory. It is not logically defensible to introduce a new medium without making modifications and adjustments in both the methods of instruction and materials. The intimate relationship between medium and method is conceded in the statement that "methods of teaching and the design of materials may ultimately be influenced by the writing-system such as i.t.a." (Downing, 1967). It is this very influence of medium on method and materials which was foreseen and programmed into the American "package deal" released in 1963. The instructional approaches, phonics program, and materials were selected to suit happily the "new" medium and to aid and abet its success. Thus, to reject it for its sensitive and particular packaging of program to fit the medium is unwarranted.

## The Phonics of *Early-To-Read*

The foresight to link i.t.a. with principally one approach, a phonic, is perhaps one of its most relevant and defensible features. A writing-system which is regularized, i.e., expanded to approximate the ideal of one unique symbol for each one of the English phonemes, suggests a methodology which takes advantage of such an equitable correspondence. Logically, a phonic approach which utilizes sound clues early in word identification is strong indicated.

### The Emphasis on Teaching Phoneme-Grapheme Correspondences

Thus, the phonics program in the American materials places emphasis on developing the phoneme-grapheme correspondences. Auditory discrimination of the phoneme precedes visual discrimination of the written symbol. One task is taught at a time. Each speech sound is presented distinctly and singly without distortion to facilitate perception. The grapheme is taught immediately and only after auditory perception for a particular phoneme is secured. The letter is not referred to by name but is persistently identified by the sound it represents. Thus, children cannot confuse the letter name and sound of the symbols. Sound and letter recognition and the correspondence between the two is acutely and highly refined. The terminology "symbol-sound" used in the manual reflects the nature of the i.t.a. writing code and the emphasis on teaching the printed symbol for the spoken symbol. Its intended meaning is clearly perceivable.

The learning of the sound-symbol relationship is further facilitated through the aid of writing. That is, letter recognition and phoneme-grapheme correspondences proceed not only through the avenue of sight but more vigorously and assuredly through the recourse of writing. "Writing-recognition" encourages more accurate perception and provides reinforcement to learning which results from kinaesthesia, the sensation of movement or motor activity. And the co-ordination of knowing and saying the sound, hearing it, writing or "feeling" the shape as well as seeing the letter form, provides a sound strategy for learning.

### The Use of Blending

Knowledge of individual phoneme-grapheme correspondences requires some mode of fusing the sounds in a word to achieve closure. The device of combining sounds, commonly known as blending, is indicated and taught. The technique of substitution and addition, employed with analytic phonics, is not immediately relevant or useful to coalescing the individual sounds of a word. The phonics in the American i.t.a. approach requires the synthesis of sounds.

### Early Introduction to Phonics

The phonics of *Early-To-Read* is distinguishable not only for its relative emphasis on phoneme-grapheme correspondences and the utilization of the technique of blending to combine sounds, but also for the time of its introduction. In the American i.t.a. program, phonic instruction is provided right from the very beginning or simultaneously with the use of whole words. It is not delayed until after children have built up an instant recognition vocabulary, varying in size from fifty to seventy-five or more words, through the so-called sight-techniques or look-say method of learning words. Nor are children introduced to the i.t.a. characters before they have developed the concept of what reading is (i.e., talk recorded) and observed and "read" their dictated stories, manuscripted in i.t.a. Thus, children are provided with opportunities to "look and say" whole words written in i.t.a. There is definite recommendation for the employment of language-experience charts. It is merely that as children look, they will be able to identify the word not through the dependent techniques of being told or using the picture clue adjacent to the word, but independently through utilizing phonic cues conjunctively with context. Thus, phonics accompanies and aids the building of sight-words and serves as the means to secure more rapidly such a vocabulary.

## Criticism of Synthetic Phonics

Early introduction to phonics taught by emphasizing phoneme-grapheme correspondences and requiring the technique of blending is distinguishable as synthetic phonics. Such designation, however, invites uncritical and unjustifiable condemnation. Synthetic phonic programs have neither been recommended nor commonly used in American schools during the nineteen-thirties, forties, and fifties. Synthetic phonics fell into disrepute during this period, in all probabilities, not so much for its limitations as for its mis-application.

It is likely that phonic teaching was introduced prematurely before children had discriminated the sounds of English or been exposed to the English writing-system; thus, children were presented with "meaningless" entities. It is likely, too, that the sounds when uttered in isolation were blatantly distorted so that their combination would not begin to approximate or suggest the word. Other malpractices such as excessive drill in isolation and an over-extended or heavy program of phonic learnings may have also contributed to its downfall.

Because of these negative associations from the past, the revival of contemporary synthetic phonic programs invites blind and unjustifiable rejection. There exist, however, both quantitative and qualitative differences among such programs of the present as well as with those of the past.

### The Synthetic Phonics of *Early-To-Read*

The phonics in *Early-To-Read* does not repeat the excesses or malpractices of the past. The history of methods of reading instruction shows the cycle of rediscovery and re-emphasis of one method over another, such as the whole word, linked with analytic phonic programs during the preceding decades, and synthetic phonic approaches. Each of these methods has its periods of popularity and disfavor. In the recurring periods of emphasis, it is hoped that improved understandings and practices result. These retrials of one method over another thus afford occasions to extend both knowledge of and methodology in reading instruction.

The synthetic phonics program linked with i.t.a. in America provides just this opportunity. Its phonics neither puts "the clock back" to the dreary, formal, and meaningless practices of the past nor is it "borrowed" from any contemporary proposals for teaching phonics. It is distinctive and unique. The dictates of the new medium on method and phonic content are clearly recognizable. As a temporary medium, employed less than one school year desirably, there just is insufficient time for excesses. The medium of i.t.a. prohibits over-extended drill and restricts needless phonic learnings. The medium of i.t.a. limits the phonics content to the forty sounds of English and the forty-four characters of i.t.a., thus simplifying and greatly reducing the schema to be learned.

There is no prescription to teach phonics through meaningless, formal repetition or blending through faulty techniques yielding distortion. Sound synthesis can be achieved in different ways, silently and mentally or orally and audibly, each of which can yield a sufficiently close approximation of the word to be useful or a remote, unrecognizable, and useless representation of the word. It must be borne in mind that phonics, at best, yields a close approximation of the word, rather than *the* word. Precaution is exercised to teach blending through valid techniques.

### The Rationale for the Phonics of *Early-To-Read*

The synthetic phonics of the American i.t.a. program with earlier introduction to phonic instruction makes possible a more rational, less arbitrary approach to word-identification and recognition sooner. Early phonic teaching is supportable or justified by the nature of the medium. Since i.t.a. is a more consistent, logical, and reliable medium, it is an easier writing-system for children to decode. Thus, early exposure to phonics can be rationalized in order to take full advantage of the new medium. This option could not best be achieved through the more conventional sight-word approach.

The justification for the use of the whole-word approach with T.O. is not more relevant to learning to read with i.t.a. Why should children learn a more perfect alphabetic writing-system through modes appropriate to a less perfect alphabetic writing-system? The whole-word approach was rationalized, in part, to be more suitable for T.O. because many words, particularly the structural words which signal "grammatical cues" to word identification, are "non-phonetic." It was reasoned that since these irregularly spelled words can not be sounded out, they should be learned as wholes. Further support for the look-say method of teaching reading was obtained from Gestalt psychology which advanced the view that perception proceeds from the whole to the part.

### Empirical Support for the Phonics of *Early-To-Read*

In addition to the logical foundation for the utilization of a phonic approach to teach reading, there exists empirical support. The available data suggests the suitability of early learning of the phoneme-grapheme correspondences and the technique of blending.

#### Data to Support Early Emphasis on Phoneme-Grapheme Correspondences

In seeming contradiction to Gestalt view on perception, the research of Williams and Levin (1967) reveals that children, at least, in the beginning stages of learning to read, utilize graphemic elements smaller than the whole word for purposes of identification. That is, though children may perceive and utilize such cues as external shape and length of a word, specific letters situated in the beginning, end, and middle of words, in that order, are much more valuable in identification than total configuration. The evidence further suggests that the use of larger units in word identification develop gradually and are employed later. Related to the importance of phonic cues in word-identification is the contribution of context cues. Levin's data indicates that words are more easily identified when encountered in context rather than in isolation.

Suggestive evidence for the early teaching of phoneme-grapheme correspondences is present. The emphasis in the American i.t.a. program on the development of phonic cues from the beginning, along with reading whole words in context in children's language-experience stories, is indicated by Levin's findings.

#### Data to Support Synthetic Phonics

Does there exist data, however, to indicate the validity of synthetic phonics? Needless to say, the evidence is only suggestive. Conclusive proof of the superiority of one approach over another, as is the case with many other issues in education, is lacking. Conclusions from educational research are conflicting; studies are, all too often, incompletely reported, omitting information critical to interpretation or conducted with flaws, thus reducing their validity. Nevertheless, there are studies supportive of the phonics in *Early-To-Read.* Three recent investigations, Linehan's, Bear's, and Bloomer's, report findings favorable to the teaching of synthetic phonics. Linehan's study, more thorough and less open to criticism, compared the effectiveness of synthetic versus analytic phonics with first graders. Initial testing in September to match the three groups revealed that the analytic group possessed a greater mental age and scored higher on nine out of the twelve letter knowledge tests. Subsequent periodic testing in November, February, and June on tests of hearing sounds, letter knowledge, word recognition, oral and silent reading, paragraph meaning and phonic ability revealed significant differences in favor of the synthetic phonic group (Linehan, 1958).

Bear's study, found wanting because the experimental teachers volunteered and the control teachers were selected, was also conducted with first graders. Again the initial testing to match the two groups favored the analytic phonics, though the difference was not statistically significant; final testing in May found the synthetic phonic group superior in measures of auditory and visual discrimination and reading achievement (Bear, 1959).

Bloomer's study, subject to numerous criticisms, was conducted not to compare the effectiveness of the two methods, but to determine the appropriate age for both synthetic and analytic phonics. His findings show that synthetic phonics can be taught in grade one. (Bloomer, 1960).

A more recent investigation by Bleismer and Yarborough, recognized as substantially a careful study and limited only in that it was not carried on beyond grade one, compared five programs of analytic phonics with five programs of synthetic phonics. The null hypothesis that there would be no differences in the reading achievement scores of the ten groups was not verified. Analyses of the data indicated that programs based on synthetic-phonic approaches were more effective. The experimenters concluded, "It would appear, therefore, that beginning reading programs which give attention to sound-symbol relationships prior to teaching of words or which involve a synthetic approach initially (pupils actually building words from sounds) tend to be significantly more productive in terms of specific reading achievement in grade one (as measured by the criterion test) than do analytic reading programs......" (Bleismer and Yarborough, 1963).

The above mentioned studies are cited not to substantiate the superiority of synthetic phonics over analytic or vice-versa but to provide foundation for the feasibility and usefulness of the phonics in *Early-To-Read*, especially with a medium that accords it greater legitimacy. Thus, the preceding investigations shed light on the misconception that any and all synthetic phonics programs are characterized by dreary, excessive, and meaningless drill, and thus unproductive and unworthy of use and trial.

## Sight Words and Vocabulary Control in *Early-To-Read*

Related to misunderstandings about the phonics in the American i.t.a. program are those dealing with the alleged absence of sight words and vocabulary control. Conceptions useful to the whole-word plus analytic phonic method of teaching reading with T.O. may not be appropriate to teaching reading with i.t.a. That is to say, procedures relevant to T.O., a complex, irregular writing-system may not be to i.t.a., a simplified, regularized writing-system.

### The Role of Sight Words

Since there are twenty augmentations in i.t.a., many words are spelled differently than in T.O. About 40 per cent of the words have identical spellings. The remaining 60 per cent vary in spellings from "almost like," to "fairly-close," and to those which are "completely different." The last category, often identified as "the shockers," though comprising 15 per cent of the spellings, contains words which have high frequency occurrence. It is evident that these words (particularly "the shockers") should *not be* learned for instant recognition only to be unlearned later or even prohibit transition. In order to facilitate transfer, the concept of "words experienced" is introduced. Again the influence of medium on program is logically and justifiably applied, and the notion of sight vocabulary has not been uncritically exercised. A cautious distinction is made between "words experienced" and sight vocabulary in the beginning stages of learning to read with i.t.a.

Therefore, the concept of sight vocabulary, employed with a more simplified and regularized medium and a phonic approach, has greater validity after transfer to T.O. As implied in the foregoing discussion, full advantage of i.t.a. as an easier medium could be obtained through equipping children initially with phonic cues as the means of figuring out and knowing the word rather than through being told or using less reliable devices as the distinct shape, length or striking characteristics of the word. Thus, the acquisition of a sight vocabulary, accompanies and succeeds rather than precedes the development of phonic skills.

### The Role of Vocabulary Control

The early development of phonic skills not only affects the state at which the acquisition of an instant recognition vocabulary is appropriate, but also modifies the degree of necessity for vocabulary control. In the conventional sight word approach children learn to read in the earliest stage through repeated exposure with a word without benefit of phonic knowledge. Children, no doubt, employ some clue to identifying the word as they "look" and "say" in response to the teacher's presentation. But since the more reliable and effective (phonic) cues are not in the repertoire of skills to aid in word identification and recognition, the number of repetitions per word and the rate at which new words are introduced are critical. Since *Early-To-Read* equips children from the beginning to apply phonic cues, a skill employed to a greater degree by able rather than less able readers, children become adept and independent in word identification sooner. A happy by-product of this facility is the *decreased* need for vocabulary control in the American materials. In fact, the reading vocabulary load programmed in the seven i.t.a. books, all intended for the first year of instruction, is greater than that of conventional reading materials for the same period. The publishers indicate the difficulty level of the transition book to be hard second or easy third reading ability.

## Reception Learning of the Phoneme-Grapheme Correspondences

Pertinent also to the nature of the phonics of *Early-To-Read* is the relevancy of the mode of teaching and learning employed with it. The method of teaching and learning the phoneme-grapheme correspondences has been identified as "largely through telling and being told and much less through guided discovery." (Ohanian, 1966). Learning theorists would identify the prescribed mode as "reception" or "expository" learning.

Many educators would regard any form of such direct presentation of content for learning in the elementary school, particularly at the very beginning, with disfavor and even horror. Self-discovery or guided discovery is *the* recognized and approved mode of teaching. Furthermore, this recognition is not misplaced.

The extensive and intensive investigations of Piaget, lend strong support to the appropriateness of the discovery mode of learning for children. Ausubel, a critical analyst, remarks unequivocally, "In the early, unsophisticated stages of learning any abstract subject matter, particularly prior to adolescence, the discovery method is invaluable." As explanation for this position, he notes, "In the absence of prior discovery and non-verbal experience, children approximately below the age of twelve tend to find directly presented verbal constructs of any complexity unrelatable to existing cognitive structure, and hence devoid of potential meaning." (Ausubel, 1961).

### The Support for Reception Learning

Ausubel's explanation affords a critical clue to judging the relevancy of teaching the phoneme-grapheme correspondences in i.t.a. through a mode which is more strongly didactic than guided discovery. That is, complex, abstract content, in particular, tends not to be meaningfully grasped if a direct, verbal mode of presentation is employed. Further, the more involved and general the task to be learned the less amenable it is to expository teaching.

Thus, the critical question to be raised is how complex and abstract is the learning of the phoneme-grapheme correspondences. Is it, for example, comparable to establishing the concept of set and of number, of ordering the numbers, of comprehending the four operations possible (adding, subtracting, multiplying and dividing), and further perceiving their interrelationships? Or is it more similar to linking the numeral (the name) with number (the idea)? The arbitrary (non-meaningful) nature of linking name with number idea and sound with symbol *seems* more equivalent, but is the discrimination of a sound like establishing the idea of number? Could it be less abstract, complex, and "meaningful?"

The teaching of some skills of beginning reading through a telling approach or direct verbal instruction seems feasible. Since the relationship between the written language code and the spoken is arbitrary, its learning may be facilitated more by expository teaching rather than solely through guided discovery. In fact, didactic teaching may lend greater support to learning, for implicit in the process of *guided* discovery is some degree of teacher influence and programming.

Experience with kindergarten children with whom this mode of teaching has been employed and the research cited earlier for the efficacy of synthetic phonics with first graders, of which expository teaching is an adjunct, suggests the useability of reception learning of the phoneme-grapheme correspondences.

Furthermore, the discovery mode of learning alone, because of the lower rate of acquisition associated with it, may not be the most suitable approach to teach a transient medium. The temporary role of i.t.a. vitiates against the use of a manner of teaching which would prolong contact with it. Thus, the basis, both logical and empirical, for expository teaching and learning of the phoneme-grapheme correspondences becomes apparent.

## Time Schedule for Transition

The scheduled time of transition in the American i.t.a. program, similar to its phonics, is another of its most logical and defensible features. To perceive the designated time of transfer, April or May of the first year, as "dangerous" is faulty.

### The Support for the Transition Schedule

The view that later transfer is more appropriate and desirable denies the.

function for which i.t.a. was designed, a temporary, initial medium. British children, according to Downing, are permitted to continue in i.t.a. until the end of grade two or beginning of grade three, the average transition time. Apparently *some* children (the slower ones) are permitted to read even longer. It seems dangerous to allow the habituation of reading in i.t.a. for two, three, or more years. The regression or plateau effect in reading performance reported in British experimental findings at the time of transition may result, at least in part, from delayed transfer.

In America some children *do* transfer out in April or May. In a community experimenting with i.t.a. for three years and possessing a representative population of disadvantaged and advantaged children, over fifty per cent have transferred out by May of the first grade. Ninety per cent complete transfer by Christmas of the second grade and the remainder by the end of the grade. Both the logic underlying the designated time of transfer and children's ability to perform on schedule, allowing for individual differences, substantiates the soundness of the American i.t.a. program.

## CONCLUSION

The foregoing exploration of the rationale for the reading program in *Early-To-Read* suggests the consideration that went into its formulation. The American "package deal" was wrought by two outstanding theoreticians and practitioners in the field of reading, J. J. Tanyzer and A. J. Mazurkiewicz. Their series makes a distinct and unique contribution to research with i.t.a. Their experimental materials, linked with a synthetic phonics approach, merits trial not only for its word-identification program, well-mated to i.t.a., but also for its innovative, sound instructional procedures. In fact, their word-attack program presents real challenges both to other synthetic and to the more often utilized analytic phonic programs.

The scope of i.t.a. experimentation may not be best extended through the use of British investigative designs and materials, *Janet and John* and the *Downing Readers*. Tanyzer's and Mazurkiewicz experimental procedures and *Early-To-Read Program* constitutes America's contribution to i.t.a. research.

Thus, the wide-spread and almost exclusive use of this series in America should not be regarded with apprehension. The real measure of its contribution was inadvertently suggested in the original misappraisal when it was likened to be the fruit of "salvation-through-innovation complex" (Downing, 1967) in the statement, ". . . one of the important next steps in our research -- if any were possible -- should be to experiment with methods of teaching and improvements to the i.t.a. script which seem likely to reduce the degree of set back." Here is a British statement implying that negative effects of transition in England may be minimized by method of teaching. Also suggested is the possibility that funds may not be available to carry forth such critical research with methodology, in which event American experimental data can be employed to fill any gap in needed exploration, at least with a synthetic-phonic approach.

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## 2. I.T.A. AND TEACHER EDUCATION

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### Introduction

In teacher education we must not only give our teachers the what to do but *why* it should be done. What we tell them must be logical if they are to become involved in helping children learn to the extent that they enjoy it. We are not meeting our professional or moral obligations to them and to the children they will teach if we do less. They come to us asking. We must learn of and give to them the best we know and keep searching.

### Improved Programs Needed

In education we are constantly trying to improve all programs and reading is not the least of them. There is evidence that we have more children reading better today than ever before. Gates (1964). This is good and we are justly proud of it. Teachers are conscientious. They are hard workers.

But good is not good enough if we can do better. We still have too many children who are having difficulty. It has been found that from 10 to 25 per cent of our children are reading below the level which might be expected from their capabilities. Bond and Tinker (1957). We are concerned about our high school drop outs. Miller (1954). Our children need to read. They are handicapped without it. There are few jobs in today's world which do not require reading. Most drop outs have reading problems. Seldom does one see a good reader who drops out of school or a drop out who is a good reader.

The call for remedial reading teachers is coming through loud and clear. Whenever a remedial teacher is hired it is not remedial science, remedial mathematics, social studies, or spelling, important as these subjects are, but remedial reading. Such call evidences education's recognition of this great need.

## The Initial Teaching Alphabet an Answer to the Need

a. As a preventive measure. Although we need cures and perhaps always will, prevention is better if we can manage it. The first place teachers seem to look when they want to improve programs is at themselves. "What are we doing wrong?" they ask. "What better methods can we use?" Reading methods have been studied intensively for many years. Harris (1960). We have found no one method that works equally well for all children. Unesco (1958). Methods are important. We can't get along without them. We get involved in them whenever we teach but we can conclude from these studies that a method is not the final answer. We are going to have to look further.

Next we begin to look at the children. "What is wrong with them?" we ask. "Why can't Johnny read as well as Tommy?" Among poor readers we find low intelligence, lack of energy due to insufficient food and/or rest, social-emotional problems, and a number of others. Yet we find many children who, from every indication, should be reading better than they are. They are intelligent. They get sufficient food and sleep. They are socially adjusted. They come from homes where reading is a part of family life. They see their parents enjoy reading. They talk about things they have read. They borrow books from the library as well as owning some of their own. Yet many of these children have reading problems. We conclude from this observation that, while the condition of the child is important as are methods of instruction, we have to look still further.

Sir James Pitman who has given it much study has been thinking that perhaps one of our troubles is the English language itself, the sound-symbol system of our written language which is full of inconsistencies. We who have been reading it for a good many years have become used to it but it can be confusing to the child who is beginning to decipher those sound-symbols so that he can read the printed word.

Sir James Pitman has, therefore, devised an alphabet with more consistent sound-symbols designed to be used with the beginning reader. There are more characters in number to this new alphabet, forty-four to be exact, but the alphabet is simpler in that each character carries, almost entirely, one and only one sound. The child can depend on it. The 'e' sound, for instance, is always written the same way. The child doesn't find it with one 'e' sometimes as in the word 'me', a double 'e' sometimes as in the word 'see', or at another time 'ea' as in the word 'eat'. He can rely on this alphabet's consistent representation of sounds.

The child learning to read by means of this alphabet finds logical reasons for the sound-symbol system. He then learns, or continues to learn as he has been taught in his preschool days, to "use his head". Being able to reason things out gives him self-esteem or self-respect. He also succeeds with reading which again bolsters his self-esteem, self-respect, positive self-concept, or ego-status. Call it what you will, a child's feeling about himself is fundamental to his learning. Frank (1963). This means a lot for the prevention of reading difficulties both academically and psychologically.

After the child is reading with success, confidence, and enjoyment, he then transfers to our standard alphabet. The transfer is made gradually. The inconsistencies of our written language do not keep him from the reading success he is already enjoying.

b. As a logical introduction to the written English language. We believe this beginning alphabet is very necessary in our country because we are composed of people of more different cultures than perhaps any other. Every culture brings its language with it. A language is made by the people who use it and every culture has exerted its influence upon our American English. For example, the 'ā' sound is spelled 'ay' in our word 'play', but 'et' in the word 'bouquet' (the French influence) and just 'e' in the word 'sombrero' (the Spanish influence). The same thing which has given our language richness has also given it confusion when it comes to reading and writing. A few of the things which have happened are: 1) We give multiple sounds to a single symbol. The 'ea' combination in 'eat' carries the sound 'ē', but in 'great', it carries the sound 'ā'. The 'ow' combination in the word 'now' carries the sound 'ow' but in 'snow', the sound 'ō'. 2) We represent a single sound with different letter combinations. The 'oo' sound in the word 'zoo' is represented by a double 'o'. But in 'do', it is a single 'o'. In the word 'shoe' it is 'oe'. In 'blue---blew' it is 'ue' or 'ew'. The sound of 'ā' in the word 'play' is represented by 'ay'. But it is 'ey' in the word 'they', 'ea' in 'great', 'ai' in 'rain', 'eigh' in 'neighbor' and 'et' in 'bouquet'.

Vowel sounds give more trouble than consonants but they too give some: 1) the sound of 'c' in 'cat' is not the same as in 'city'. The sound of 's' is different in the words 'same', 'please', and 'tissue'. The 't' in the word 'take' and the 'h' in the word 'happy' carry different sounds when written together as in the word 'the'. Then there are the 'ed' endings. This combination sounds one way in the word 'painted', but another way in the word 'played' and still another in 'jumped'. These inconsistencies if presented too fast, as they must be if the child's reading vocabulary is to keep up with the one he is using orally, confuse him and he learns that he can't reason things out. He has to accept them just because people tell him that's the way they are. This deflates his ego, his self-concept, and he becomes discouraged. A study by Schubert investigated the characteristics most frequently found among best and poorest readers. That most frequently observed among the best readers was that they read for pleasure, 97.5 per cent of them revealed this characteristic whereas it was found among only 15 per cent of the poorest readers. Schubert (1956). Children have to enjoy reading if they are going to read much. To read much the child has to be able to decipher the code, and have content which holds his attention.

### Progressive Steps in the Teaching of Reading

As we look at progressive steps we have made over the years in the teaching of reading, we have always realized that one factor in being able to read is to decipher the symbols. Thus, years ago, we gave our phonic system to our children as they began to learn to read. We found this very difficult for many children. As a result we resorted to much drill, meaningless to the beginning reader. To him, memory without reason resulted in much failure, dunce-cap wearing, and very early drop outs.

Realizing then that in order to accept reading the material must hold meaning for the child, we put into our beginning reading programs a sight vocabulary, words which the children understood and which they learned to recognize by sight. It was more interesting to them and therefore more motivational to memorize meaningful words than meaningless sounds. This was a step forward for we were recognizing the need for meaning.

However this procedure has resulted in much repetition of a limited number of words. It gives the child a smaller, much smaller reading vocabulary than the oral one he is using when he enters school. Our linguists have been pointing out to us for some time the gap, quite a tremendous gap, between the first grade child's oral vocabulary and his written one. If a child's reading material does not keep up with his speaking ability, with his intellectual interests; if it is such that gives him no challenge, he becomes bored. This child is going to seek activity elsewhere. Many of our behavior problems come from boredom. Our children today, because of television and modern means of travel, have a rich vocabulary and what we used to consider, quite advanced concepts. Just listen to questions of the six year old or even the five or the four year old. We can hardly keep up with them sometimes. Answering children's questions is important to their learning. Dolores Durkin's study of early readers shows that one characteristic of children who read early is that parents answer their questions. Durkin (1959). With the initial teaching alphabet the child can be given a sound-symbol system earlier than with our traditional phonics, nevertheless one that works, one which enables him to decode written symbols and encode sounds, therefore to read and write words comparable to his thinking and talking vocabularies. To read with understanding a child must read accurately. A recent study done in our Campus Elementary School revealed that the most common error made by children in the primary grades was mispronunciation. Carrithers (1965). One conclusion drawn from the final report of the *Lehigh-Bethlehem Evaluation-Demonstration Project on the Use of i.t.a.* is that i.t.a. taught children achieve word recognition at the end of first and second grades significantly better than T.O. taught children. Mazurkiewicz, Director (1967).

## Child Development Foundation for i.t.a.

As we look at patterns of child development we find support for the use of the initial teaching alphabet. We see physical development quite clearly and accept progressive stages from sitting, to standing, to walking. In language development we see that the child babbles, or practices sounds, before he puts them together to form words. We accept these steps in development as he is able to do them and from our reactions give him the feeling that he is achieving. He gets much pleasure from his feeling of success which inspires him to greater effort and further success.

It seems only logical then that as the child begins to learn to handle our written language, we give it to him in the order in which he can handle it successfully, beginning with a sound-symbol system he can use for self-help in becoming an independent reader, transferring to the traditional one of our English language as he gains a feeling of competency.

## Culminating Conclusions for Teacher Education

These understandings we endeavor to put into our teacher education program. Teachers understand and teachers accept. We have read the results of research. We, in the Milwaukee area, are not engaged in formal research ourselves but we are engaged in i.t.a. Teachers are trying it. Its use has grown from two first grades in 1964-65 to approximately forty in 1966-67. This number will be more than doubled in 1967-68. Two systems will go into it entirely, West Allis and Kewaskum. It has grown because we tried, we observed, we see the things happening to children which formal research has told us happens. I have never seen such enthusiasm as I am observing from children, parents, teachers and administrators who are using this new initial teaching alphabet. They are enthusiastic because of what they see that it does for children.

We have been given through this alphabet of Sir James Pitman, a tremendous contribution to the prevention of reading difficulties with its resultant mental health for our children and its value to society in enabling us to make the greatest use of our most valuable resource, that of human potential.

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## 3. THE DIRECT INSTRUCTION PROGRAM FOR TEACHING READING

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Whether a child learns to read by a whole-word, phonic, or a combination approach, he must at some time in his reading career master the mechanics of translating letter sequences into sound sequences. Since the steps that are involved in this decoding process are not always clear when one works with "average" children, my colleague Siegfried Engelmann and I are developing a program designed for "special" children: culturally disadvantaged, slow-learning, language deprived or problem readers -- that considerable segment of the school population that has great difficulties learning to read.

Our approach has been to identify the major sub-skills critical to learning the mechanics of reading and to make these sub-skills objectives of instruction. On the average, children with MA's of about five years learn to read, as we define reading, after fifty hours of instruction.

With most educators we agree that mature reading provides a humanistic experience on the level of meaning and thinking, and we agree with Dolch (1960) that ideally, reading should become "a mental process of the highest level and greatest possible educative value." But our position is that beginning reading should concentrate on mechanics until substantial mastery has been achieved. Our position further is that the time normally allocated to readiness, discussions of comprehension, building meaningful experiences, teaching to verbalize thoughts and feelings and ideas should be devoted to mechanics. We do not dispute that the broader skills must be taught at some point in the reading instruction, but we feel that the special child must concentrate on mastering the mechanics of reading for a good portion of his beginning year.

### Focus on the Special Child

During 1965-1966 I taught 20 *middle-class* four-year-olds with i.t.a., and after 50 hours of instruction they tested at the 2.2 reading level (Bereiter 1967); after 100 hours they read at grade level 3.4. These research results suggest that i.t.a. can be a tremendous tool and that early reading proficiency does not necessarily respect chronological age.

Our first clues as to the importance of the sub-skills emerged from the slower of these "average" middle-class children, for even with their comparatively rich background of experience, they had some difficulties in learning several of the essential sub-skills. It was not, however, until this year, when I started working with "special" slower learning culturally deprived four-year-olds, that we found it necessary to provide a program that would teach these critical sub-skills.

The contrast between the middle-class and the disadvantaged children has been a valuable experience. We began to see why materials designed for the "average" child not only failed to teach the slower child, but often delayed his progress. When the instruction devised for an average child failed to teach a requisite skill to the slower child, the slower child stopped and remained stopped sometimes for weeks until we found a new way to teach that skill.

The special learner has provided a natural laboratory for focusing on precisely which skills are essential to reading because:

1. The child learns slowly, which means that the curriculum designer can observe the problems he encounters in some detail.

2. The child probably has not learned or only partially learned the skill outside of the instructional setting. This means that if he learns to handle a particular sub-skill, we can credit the instruction with having taught it (Engelmann 1967).

### What are the Major Sub-skills?

Three of the sub-skills -- words, blending, and irregulars -- will be discussed in this paper.

1. Words

The special child must be taught to focus on words and parts of words. To teach the child to focus on parts of words, the teacher introduces verbal rhyming and alliteration tasks. In rhyming, the child must hold part of the word constant (the ending) and vary the other part.

"I want to hear some words that rhyme with *jellybean*.
Here's one: *ssselybean*.
Here's another: *mmmellybean*.
And another: *fff........*"

To teach alliteration (in which the beginning part stays the same and the ending changes), the teacher says,

"I want some words that start out the same way as *MMM-om*.
Here's one: *MMM-otor*.
Here's another: *MMM-ickey Mouse*.
Another: *MMM-.....*"

If the child has not mastered rhyming and alliteration skills, he will have a difficult time reading. He will not understand how similar words are similar. Two words are similar because they share a part that makes the same sound. If the child cannot hear the way in which *sat* and *mat* are the same, he is not in a very good position to look for the sameness in the orthography of the two words.

But, asking the special child, as do many reading programs, to tell if *sat* and *mat* end with the same sounds is a hopeless task for several reasons:

(a) The child may not know the concepts of same and not same. These are difficult concepts and should be taught in a language context.

(b) In some dialects speakers leave off the *t* sound at the end of the word. Therefore the pair becomes a choice not between *sat* and *mat*, but between *sa* and *ma*. *Sa* thus could be *Sam*, *sat* or *Sa' Claus*. *Ma* could be *mat*, *man* or part of *mas'* to cover a face.

(c) In some dialects speakers can decode the phonic *s-a-t*, but must first be shown the word *sat* refers to the action they describe with the word *set*. Other speakers must retranslate from *sa-yit* to *sat*.

(d) The child has difficulty hearing sameness in short words, whereas exercises focusing on *sat* and *mat* in *Sat-man* and *Mat-man* as rhymes of *Bat-man* are easier for him to handle.

(e) In order to understand what "sound the same" means, the child must already have mastered the skill we are trying to teach.

The special learner must also be taught that both spoken and written words have parts and that these parts appear in certain inviolable order. Since no learner can be taught all the words he will ever encounter, we must teach the convention that any word -- familiar or unknown -- must be decoded into sounds that are patterned in a unique order.

The culturally-deprived child may decode the word *story* as *stroy*. He may not know the meaning of *story*, but before he can think about meaning, he must decode the word correctly.

The middle-class child may know the meaning of the word *story*, but if he decodes it as *stroy* and possibly changes it to *destroy* he violates the order of the parts of the word and cannot derive the intended meaning.

2. Blending

Parts of the unblended word are separated by pauses in time. The well-known *cuh-a-tuh* therefore does not sound like *cat* to this special child because the parts of the blended word *cat* are not separated by pauses. Also there are sounds in the unblended word such as the *uh* on *cuh* and *tuh* that do not appear in the blended word.

We have identified five major blending steps to teach the relationship between blended and unblended words. Convinced by our experience in 1965 with i.t.a. and encouraged by the research results recommending the use of an intensive phonics approach (Gurren and Hughes 1965), we adopted a symbol-sound alphabet. Teaching one sound for each symbol, we initially present the letters *s, m, r, f, n, a (fat), o (fox), i (fit), ē (me)* selected not on the basis of "linguistic" considerations or frequency of use; rather they are selected on the basis of specific difficulties the child has in learning to read. The consonants are continuous sounds; no stop sounds are used until the child has mastered blending the continuous ones. These letters allow for the most precise demonstration of the relationship between the unblended word and the blended word. Letters with stop sounds that may also be visually confusing such as *b, d, p, g*, though of high use frequency, are not introduced until later. Our five major blending stages (taught concurrently with other tasks) are:

Blending I (oral) *The child blends together two parts of a familiar word.*

He is asked, "Do you know what this is? *ham* (pause) *burger*." If he cannot blend *hamburger*, he is shown the picture and asked, "Is this Superman? No. What is it?" He is shown the relationship between his response *hamburger* and the unblended word. In time, he learns to telescope the two parts of a compound word.

*The child blends together more than two parts of a familiar word.*

The pattern is similar to the above step. "Do you know what this is? *tel-e-vi-sion*." If he blends the word, he gets to see the picture and moves on.

*The child blends together many parts of a familiar word in a story context.*

One-minute stories are told in the reading class, where the last word is spelled out by sound. "Once there was a big *g-ō-s-t*. What was there?" "He wanted to eat some sweet *c-a-n-d-ē*. What did he want?"

Increased proficiency in this task enables the teacher to spell out the entire story, the children telescope her words and answer in a completely meaningful manner. The process is similar to a foreign-speaking parent addressing his child in the foreign tongue and the child answering in English. The teacher may spell

> *I w-a-n-t t-o j-u-m-p o-n a c-r-o-c-o-d-ī-l.*

The children might respond:

> "You better not, that mean animal might eat you."

Blending II (oral-visual) *The child blends letters before he can identify all the letters in written words.*

On one side of a card is a vivid picture of a familiar object and the reverse is the word. The instructions are, "Tell me the word and I'll show you the picture." The teacher points to and identifies the letters (by sound) in *m-a-n*. After the child telescopes the word *man*, he is asked to tell what the object is. For *man* he might say, "like a Daddy," or "man not lady." Then the card is reversed and the picture shown. If the word contains known letters, he is encouraged to identify them.

Blending III (visual) *The child identifies and blends all the letters in written words.*

The teacher teaches the child to blend without pausing between letters. The child is taught the convention that one sound is held until the next one is produced. Sounding out *ran* is *rrraaannn*. In this unblended word there are no pauses; there are no extra sounds. Its relationship to *ran* is therefore quite obvious. Stop sounds are a much later series of steps.

The first stop sounds are introduced at the end of three-sound words such as *rat, rag, rab*. Then stop sounds are moved to the beginning of three-sound words. To demonstrate how they work, the teacher introduces a familiar ending such as

an an an

Then she adds familiar continuous-sound beginnings:

fan man ran

Then these beginnings are erased and stop-sound beginnings are substituted:

can tan ban

Attention is called to the vowel before the word is attacked. "What does this say? *aa*. So this word is *caa-n*." By calling attention to the vowel, the teacher allows the child to produce the sounds of the first and second letters together, *caa*, thereby eliminating some of the difficulties associated with stop-sounds.

Blending IV (oral) *The child unblends (spells) a word into its separate letters.*

The special learner has considerable difficulty understanding the alphabetic principle -- that words have spelling. Spelling by sound is taught soon after the child achieves simple reading. Spelling is asking the child to unblend, or give the parts of the telescoped word. He is given the instruction, "Spell *fa*." He is then taught by a drawn-out pronunciation to hear the separate parts *fffaaa* and to telescope them as *fa*. He then progresses to *fat* and other two-sound and three-sound words.

Blending V (visual) *The child learns the written extension of oral spelling.*

We use a variation of the experience chart. The teacher asks the children to produce a one-line story. They may respond with "I like to eat ice cream." Teacher repeats the sentence asking them to unblend or spell each word as she writes it on the board in the alphabetic convention they have been taught. The children reread the "story", and the teacher points to the word *līk*, identifying it as *eat*. The children learn to correct her and respond with "It can't be eat, it has no *ē* and no *t*, and there's an *i* there."

3. Irregulars I The "regular" irregulars.

This is the final step in our beginning reading program and is actually taken in gradual stages starting when the children begin reading stories. We start introducing irregularly spelled words. These words are presented as "funny words," that is, words that are spelled a sound at a time, the way any other word is spelled, but words that are pronounced as if they were spelled differently. Handling irregulars in this way is extremely important. The child must learn that the spelling of words is not arbitrary. He must realize that the word *like* is always spelled the same way; but that is pronounced as if it were spelled differently, without the final *e*.

We say, "It looks like līk-e, but we don't say *lik-e*, we say *lik*."

The extension of Blending V (spelling) with the experience chart comes at this time when the teacher spells *have* from the children's dictation, adding the final *e* and points out that this is how it is spelled and the *e* is just there. Unless irregulars are handled in this way, a certain number of children will abandon any kind of phonetic attack, trying to remember individual words or guessing at the word *like* by calling it *live* or *let*.

Irregulars II The "irregular" irregulars

After introducing the idea of "funny words" and teaching the child the convention for handling them, we concentrate on an initial set of irregulars by removing the long vowel sign from *he, she, we, me, go, so, no*. We then progress to other common words that are not as easy to handle as either of the above sets of irregulars such as *to, want, was, were, of, etc.*

## The Need for Materials

The program in its present form is relatively effective. Specially trained teachers have achieved good results with culturally disadvantaged youngsters. One group of these children tested at the 2.6 grade level in reading after about 100 hours of instruction.

As an alternate solution to the special training needed to handle the tasks properly, Engelmann and I are developing a program that does it all. This program will incorporate the various skills outlined in this paper into a package that teachers can use.

Reading materials should enrich the child's vocabulary and comprehension and should themselves be an instrument of instruction. The language style and content of the readers will stress the teaching or school language the child will need to master to succeed in public school. Many of the basic language concepts to be covered are those from the work of Bereiter and Engelmann 1966; Osborn 1967; Engelmann and Engelmann 1966.

This paper has explained the philosophy and method of a reading program developed for those children who could become problem readers. It has outlined some of the basic sub-skills, among them words, blending, and irregulars. Further research during 1967-68 will test this reading program

1. In our University of Illinois preschool and kindergarten;
2. In demonstration classes for the disadvantaged from preschool through grade three;
3. In remedial reading classes for grades one through six, and
4. In a program for high school age dropouts.

Conference participants are invited to view the short film entitled "Preschool Reading -- University of Illinois", scheduled for showing at special sessions during this conference. This film shows two reading groups of young disadvantaged children after the first fifty hours of instruction.

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* The reading programs discussed in these publications are not in current use in our school.

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* The reading programs discussed in these publications are not in current use in our school.

## B. TRANSITION

One of the questions raised most frequently about the effectiveness of i.t.a. deals with the changes that take place when the learner stops using i.t.a. characters and begins to read material in our conventional alphabet. Part of the answer to this question lies in the substantial number of studies that show that i.t.a. children read better when tested in T.O. than their T.O.-taught counterparts. It would seem logical that a beginning reader's performance would be at a higher level in a simple regular medium than it would be in a complex irregular one. In a recent publication, Dr. John Downing reported a regression in T.O. scores as compared with children's i.t.a. scores obtained six months earlier (Downing, 1967). It is extremely difficult to evaluate Dr. Downing's findings, since the i.t.a. tests were administered at the end of one school year and the T.O. tests administered shortly after the children's return from their summer vacation. There is a well-known general regression which almost all children show after an extended period of time outside of the school setting.

There are four major approaches to transition which have been attempted thus far. In Great Britain, the practice generally has been not to teach any formal transition, but rather to allow it to take place "naturally" as the child begins to run out of i.t.a. books and turns to T.O. materials instead. Earlier in these proceedings, Dr. A. Sterl Artley described a procedure he uses in an adult remedial setting. He uses one page printed in i.t.a. and the material facing it printed in T.O. The two remaining transition techniques are those used in the *Early-To-Read Series* (i.t.a. Publications Inc.) and one developed by the Educational Research Council of Greater Cleveland. The two papers in this section of the proceedings deal with studies of one or both of these latter transition techniques.

The studies reported in this section are the only studies conducted thus far which specifically attempt to investigate issues related to transition. They used somewhat different sets of materials and, certainly, different teachers and children. There are many issues which, of necessity in any given study, were dealt with in a somewhat arbitrary fashion. Thus, the question of when transition should take place is arbitrarily defined. It is usually based upon the amount and character of materials in a particular series. The point at which testing in T.O. takes place, including the amount of prior familiarity with T.O., is also selected with some degree of arbitrariness in any study.

The study by Mr. Robert Willford and Mr. Bernard Shapiro deals with the comparative effectiveness of three different methods of transition. They report finding significant differences between them. The study by Drs. Harold Tanyzer and Harvey Alpert and Mrs. Lenore Sandel deals with the comparison of children's i.t.a. and T.O. scores at the completion of the *Early-To-Read* Series. Their study is relatively unique in that they did not test all children at the end of a fixed administrative period of time, but rather at the same educational point (i.e. the completion of the *Early-To-Read* Series). Perhaps, their most interesting finding is that when children who complete transition early are compared with children who make the transition late, their reading scores are not significantly different. The late transition group simply takes a longer period of time to get to a given level than the early transition group. While this should not be particularly surprising, it does raise a series of important methodological questions in the field of education in general and i.t.a. studies in particular.

The studies reported here should contribute to the general sense that there is no serious problem with transition from i.t.a. to T.O. Both studies will require replication and additional studies should be undertaken to clarify a number of important dimensions related to transfer. For example, is a particular strategy necessary, or is the amount of exposure to i.t.a. materials the critical variable? Should a particular transition strategy be used with certain kinds of children, with a different strategy used with others? At what point should testing in T.O. take place? How long should a child be kept in i.t.a., or, perhaps, permitted to read in both alphabets -- for the most effective learning to take place? How would an increase in the length of time in i.t.a. effect such issues as spelling, writing, attitudes toward school, etc.? The Editor believes that more than enough research has been conducted which compares i.t.a. and T.O. children in beginning reading classes. It is unreasonable to ask for more evidence than is presently available. Few, if any, of our present educational practices can marshall even a fraction of the amount of supportive evidence already demonstrated for i.t.a. Additional studies are needed, but they should deal with *how* to use i.t.a. most effectively, rather than whether or not to use it.

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## 1. THE EFFECT OF THREE DIFFERENT METHODS OF TRANSITION ON TESTED READING ACHIEVEMENT

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### Introduction

The major objective of the Educational Research Council of Greater Cleveland is to provide quality education for all children through continuing research and curriculum development. In terms of reading, the Council currently has one of the largest single i.t.a. projects in the United States. During the 1966-67 school year, more than 8,000 children, in twenty-six of our participating school districts, received their beginning instruction in reading and writing skills through the i.t.a. medium. The projected figures for the 1967-68 school year indicate that the ERC i.t.a. project will include approximately 14,000 primary school children. Our responsibility for the educational welfare of these children requires continuous assessment of educational practices, programs, and learning principles, both to insure that they are adequately supported by the available research and to develop experimental programs based on new and accumulated knowledge about learning phenomena.

As a result of the research arising from our own i.t.a. projects (e.g., Shapiro, 1967) as well as a continuous review of the literature related to other i.t.a. programs, we have become increasingly sensitive to that aspect of the i.t.a. system known as "transition". Although reported subjective assessments indicated that transition from i.t.a. to T.O. was an automatic and natural process, the research data (Downing, 1967) tended to show that at the terminal stage of i.t.a. instruction, the children's reading achievement in T.O. was typically about six months below their measured i.t.a. performance. Results from our longitudinal research studies (Shapiro, 1966, 1967) tended to support this same regression pattern, the actual discrepancy between measured i.t.a. and T.O. achievement depending upon IQ and the time of testing.

Intensive observation and survey of our i.t.a. project classrooms resulted in the identification of a number of practices and demonstrated behaviors which also seemed to indicate possible difficulties with the transition stage of instruction. Thus,

1. The assigned level of post-transition reading in traditional series was typically below the readability level of the last book in the i.t.a. instructional series used in the initial program.

2. Even though the T.O. materials were at a lower reading level than the children's former i.t.a. achievement level, teachers found it necessary to do a significant amount of post-transition diagnostic teaching in order to provide the children with the skills necessary for adequate mastery of the traditional reading materials.

3. Children continued to use i.t.a. symbols in their writing from one to six months following the transition period.

4. Children who were homogeneously grouped on the bases of measured IQ and/or demonstrated i.t.a. reading proficiency and fluency prior to transition instruction exhibited significant variation in their demonstrated post-transition T.O. reading achievement.

These observational reports and the accumulated research data led us to question the assumption that transition was an incidental and automatic process or that it required only moderate instruction. Rather, it seemed to us that transition was a crucial and complex stage of learning that warranted both comprehensive instruction and more detailed research. The study reported here was intended as one step in this direction.

## The Study

The purpose of this study was to investigate the measured effectiveness of three instructional strategies as applied to the task of mediating reading, spelling, and language achievement of children undergoing transition from learning and instruction in the Initial Teaching Alphabet medium to learning and instruction in the Traditional Orthography.

The major hypothesis to be tested was that "different i.t.a. transition instructional strategies affect the immediate post-transition level of children's achievement as measured by the Word Meaning, Paragraph Meaning, Word Study Skills, Spelling, and Language tests of the Stanford Achievement Test Primary II Battery." An instructional strategy as defined for this study involved a series of planned learning experiences through the utilization of the materials and methodology inherent in a specific program of instruction over the eighty-five day treatment period.

## The Instructional Strategies

Instructional Strategy I (referred to in this study as the ETR strategy) included the procedures, methods, and materials described in the transitional phase of the i.t.a. reading program entitled the *Early-To-Read* Series plus an undefined post-transitional program. The *Early-To-Read* Series was developed by Dr. Albert Mazurkiewicz and Dr. Harold Tanyzer and is published by Initial Teaching Alphabet Publications Inc. of New York. The transitional phase of this series is limited to portions of Books 6 and 7 (First Edition), the accompanying workbooks, and the teacher's manual. The instructional strategies used in this program to elicit transitional decoding and encoding behavior are described in the teacher's manual and inferred from the readers and workbook. The procedure used in the expository reading materials to introduce i.t.a. configurational and traditional respelling changes involves a combination of dissolution of the unique features of the i.t.a. augmentations and the injection of non-prompted traditional respellings of certain phonemes. The method followed in the transitional workbook involves eliciting certain marking and respelling responses in the presence of word and pictorial stimuli. The formal transition phase of this program involved approximately fifty-five days of instructional time to complete. At the termination of this phase of the strategy, the subjects were introduced to various post-transitional T.O. reading programs.

Instructional Strategy II (referred to in this study as the GCRP study) involved the procedures, methods, and materials included in the Greater Cleveland Reading Program -- GCRP/i.t.a. Language Arts Transition Program. This is an experimental program designed specifically for this study. The program consists of eighty-five instructional units. Each unit is designed to elicit specific responses identified as crucial to the demonstration of adequate transitional behavior. The strategies used in this program are related to the tasks of (1) bringing learned verbal and written responses under the control of new stimuli, (2) eliciting additional differentiated responses to discriminative stimuli, and (3) eliciting new verbal, intraverbal, and written responses in the presence of stimuli of increasing complexity. The program consists of two teachers' guides, two student workbooks, transition wall charts, three transitional readers, and other instructional aids.

Instructional Strategy III (referred to in this study as the "no transition" or "Control" strategy) involved subjects making immediate transfer from instruction and reading in the i.t.a. medium to instruction and reading in T.O. without exposure to any instruction of transition elements. The change took place at the beginning of the experimental period when the subjects had reached the transition phase of Book 6 of the first edition of the *Early-To-Read* reading series. At this point, the subjects were introduced to the various basal reading programs available in the participating districts. The post-i.t.a. instructional strategies were dictated by the T.O. programs being used. The rationale for including this strategy in the study was to provide the project with important data which could be used to assess the implications of the transition/no transition dichotomy.

Procedures

The initial steps for implementation of this i.t.a. transition research project were taken in June, 1966. A meeting was held for the Reading Co-ordinators identified by each of thirty-one school districts that constitute the participating membership of the Educational Research Council. The Co-ordinators were given the pertinent information concerning the problem being investigated, and they were asked to volunteer thirty i.t.a. classes whose members qualified according to the following criteria:

1. They had all received their basic i.t.a. instruction through the i.t.a. Publications' *Early-To-Read* Series.

2. They had not progressed beyond that point in Book 6 (first edition) of the series where the first transition elements are introduced.

3. They had received no known formal transition instruction.

4. They were all to enter the second grade in September, 1966.

Because of the hesitancy voiced by many of the Co-ordinators to volunteer groups that could be assigned through the randomization procedures to the "no-transition" treatment, only twelve second grade classes were volunteered for the study. These twelve were randomly assigned to the three treatments, but the resulting N of four in each treatment group threatened to reduce the power of the statistical tests below that required to detect meaningful differences between the groups. Therefore, in the analytic work, despite the selection procedures outlined above, the individual pupil was treated as the basic sampling unit. It should be noticed that this procedure, introducing what Stanley and Campbell (1963) refer to as a quasi-experimental design, tends to reduce the within group heterogeneity.

Prior to the beginning of school in September, 1966, the teachers of the twelve participating classes were notified of the assignments of their classes, and arrangements were made for an in-service workshop for all the teachers. During the workshop, the teachers were given the details of the project and familiarized with the programs they were to use. They were all encouraged to be as creative and imaginative as possible in developing the highest level of achievement feasible during the treatment period. The only cautions which they were asked to observe were that they follow the recommended activities and procedures described in their respective series and that they not use materials or instructional guidelines from the other programs included in the study. For example, the teachers of the GCRP classes were not to use transitional materials from the *Early-To-Read* program, nor were the ETR teachers to use activities or materials from the GCRP series. The teachers of the "Control" or no-transition classes were asked not to expose their students to any formal or informal transition materials nor supply the students with any verbal or symbolic association between the i.t.a. medium and the traditional orthography.

The teachers were all provided comprehensive daily logs which they were asked to complete following each Language Arts instructional session. The information requested in the logs related to (1) attendance, (2) title and content of the daily lesson, (3) any observed difficulties experienced by the children with the lesson(s), (4) length of time spent on each of the Language Arts activities, (5) listings of daily visitors and the purpose of the visit, and (6) any general comments or observations.

During the course of the research, staff members of the Educational Research Council Reading Projects visited each of the groups at least twice weekly to observe (1) if the guidelines were being followed, (2) if the teachers' logs were complete and current, and (3) if the children in the various treatment groups were exhibiting any unique behaviors in relation to the strategies being used. In order to minimize observational biases and differences in consulting proficiency, the staff observers were continually rotated between the treatment groups.

### Testing Schedule

The following tests were administered to the three treatment groups.

| Date | Test |
|---|---|
| September, 1966 | Stanford Achievement Test, Primary II Battery (SAT-II) Form X, i.t.a. version |
| September, 1966 | SAT-II, Form W, T.O. version |
| October, 1966 | Lorge-Thorndike Intelligence Test, Level 2, Form B |
| January, 1967 | SAT-II, Form Y, T.O. version |
| March, 1967 | SAT-II, Form X, T.O. version |

The Lorge-Thorndike Intelligence Test was administered in order to determine whether there were any significant differences between the three treatment groups in terms of IQ. The SAT-II, Form X, i.t.a. and T.O. versions, were used as the pre- and post-test measures respectively. The i.t.a. version was specially transliterated for this study by permission of the publishers; it was the initial pre-experimental measure taken, and SAT-II, Form W (T.O.) was given immediately following in order to obtain a pre-experimental measure of the children's T.O. achievement level. SAT-II, Form Y (T.O.) was given to all groups in January, 1967 when the subjects in the *Early-To-Read* strategy had completed the formal transition activities as specified by the ETR Series. The final Form X test was administered to all groups in March, 1967, at the end of the treatment period, i.e., when the subjects in the GCRP/i.t.a. Language Arts Transition strategy had completed the formal transition activities as specified by the GCRP Series.

Although it was felt that practice on one form of the Stanford would not provide the subject with sufficient cues to substantially influence his score on other forms, it was recognized that the repeated administration of the Stanford Battery might introduce a practice effect of unknown magnitude.

Since, however, it was necessary to have comparable pre- and post-transition treatment measures, it was simply assumed that the practice effect, if any, would be equivalent for all groups and, therefore, not affect the comparison between them.

## The Findings

Since both the teachers' log and the observational data are still being tabulated and analyzed, this report of the findings is limited to the test data itself.

Table 1 presents the results of the IQ test administration. Although the absolute value of the mean scores indicates that the GCRP group had a slightly higher IQ than the others, an analysis of variance yielded an F ratio of +.18 with 2 and 72 degrees of freedom. This F ratio was found not to be statistically significant at the five per cent level.

TABLE 1

Lorge Thorndike Intelligence Test, Level 2, Form B

| | GCRP | ETR | CONTROL |
|---|---|---|---|
| Group Means | 109.92 | 108.24 | 108.92 |
| Standard Deviations | (12.08) | ( 7.83) | ( 9.21) |

1. An analysis of Variance of the IQ scores yields an F ratio of .18 with 2 and 72 degrees of freedom. This is non-significant.
2. The F max homogeneity of variance test yields an Fmax of 2.38 with 2 and 24 degrees of freedom. This is non-significant at alpha = .05.

Although there were no statistically significant differences between the groups in terms of IQ, it was felt that in the analysis of the achievement test scores, it was also necessary to insure against differences between the groups in their pre-experimental level of i.t.a. reading achievement. Therefore, in considering the post-test achievement measure (SAT-II, Form X, T.O. version), the analysis of covariance was used. The covariate measure was SAT-II, Form X, i.t.a. version, the initial pre-experimental measure taken. The results of the covariance analysis are presented in Table 2.

As indicated by the F ratios in Table 2, statistically significant differences between the groups were observed in all the subtests except for Paragraph Meaning. The differences in the Word Meaning and Language scores were found to be significant at the .01 level. The differences between the groups in Spelling and Word Study Skills scores were significant at the .05 level. Although the mean scores of the GCRP group appeared to be somewhat higher than the ETR and "Control" groups in the four tests where significant differences were observed, the Duncan Multiple Range test was used to determine just which group differences were contributing to the overall significant results.

It was found that:

1. The mean Word Meaning score of the GCRP group was significantly greater than that of both the ETR and "Control" groups. There was no significant difference between the mean scores

## TABLE 2

Mean Grade Scores of Four Test Administrations
Analysis of Variance and Duncan Multiple Range Test
Stanford Achievement Test Primary II Battery Forms W.X.Y.

| | Test 1 Form X (ita) GP 2.0 | Test 2 Form W GP 2.0 | Test 3 Form Y GP 2.4 | Test 4 Form X (T.O.) GP 2.6 | |
|---|---|---|---|---|---|
| | | | GCRP | | |
| Word Meaning | 3.08 | 2.79 | 3.47 | 4.01 | 5.49** |
| Paragraph Meaning | 2.53 | 2.70 | 3.36 | 3.59 | 5.13** |
| Spelling | 3.50 | 1.88 | 3.23 | 3.83 | 36.78** |
| Word Study Skills | 5.68 | 3.38 | 4.23 | 5.22 | 13.28** |
| Language | 3.37 | 2.70 | 3.50 | 4.06 | 9.53** |
| | | | ERT | | |
| Word Meaning | 2.33 | 2.10 | 2.75 | 3.31 | 14.59** |
| Paragraph Meaning | 2.08 | 1.98 | 2.71 | 3.10 | 15.09** |
| Spelling | 2.67 | 1.59 | 2.64 | 2.78 | 32.35** |
| Word Study Skills | 5.14 | 2.16 | 3.16 | 4.07 | 28.59** |
| Language | 2.12 | 2.33 | 2.96 | 3.26 | 18.13** |
| | | | Control | | |
| Word Meaning | 2.22 | 2.12 | 2.61 | 3.16 | 20.11** |
| Paragraph Meaning | 1.94 | 1.97 | 2.68 | 2.82 | 35.05** |
| Spelling | 2.76 | 1.66 | 2.64 | 3.08 | 37.53** |
| Word Study Skills | 5.23 | 2.26 | 3.40 | 3.84 | 24.43** |
| Language | 2.12 | 2.46 | 2.70 | 3.11 | 19.95** |

Notes:

The F ratios are the results of analyses of variance (one-way) between the grade scores of the first four tests given in the transition study.

** = significant at alpha .01

The numbers in parentheses indicate which means the given mean is significantly greater than: results from Duncan's multiple range test of the ETR and "Control" groups.*

2. The mean Spelling scores of the GCRP and "Control" groups were greater than that of the ETR group. There was no significant different between the mean scores of the GCRP and "Control" groups.

3. The mean Word Study Skills scores of the GCRP group was significantly greater than those of both the ETR and "Control" groups. There was no significant difference between means of the ETR and "Control" group.

4. The Language scores of both the GCRP and ETR groups were significantly greater than that of the "Control" group; the GCRP mean was in turn significantly greater than that of the ETR group.

In general, these findings indicate that when adjustment is made for initial level of i.t.a. reading achievement, alternate programs for i.t.a. transition instruction have direct influence on the immediate post-transition level of T.O. reading achievement. In terms of the specific instructional strategies, the GCRP strategy seems, in general, to have been the most efficacious.

As indicated in the testing schedule, Forms W and Y of the SAT-II were given to the subjects during the time interval between the pre- and post-test administrations. These tests were given in order to measure (1) the subjects' pre-treatment T.O. reading achievement and (2) their cumulative progress during the treatment period. One-way analysis of variance between the four grade scores for each treatment group on each of the Stanford sub-tests yielded F ratios which were in each case statistically significant beyond the .01 level of confidence. That is, within each group and on each subtest, there were statistically significant changes in the measured level of achievement. The unadjusted mean grade equivalent scores for each of the treatment groups on all four test batteries are shown in Figures 1-5. Each figure illustrates the trend of the unadjusted means for each of the treatment groups for one of the subtests. Since the scores are unadjusted, and since the focus of interest here is on within group differences, attention should be directed not at the relative height of the lines, but at their slopes.

Figure 1 presents the data for the Word Meaning test. It can be seen from this figure that although the mean scores of each treatment group differed somewhat in terms of the measured gains between the testing intervals, the overall trend was much the same for the three groups. In each case the pre-treatment Form W (T.O.) mean score is lower than the pre-treatment Form X (i.t.a.) mean. This condition is then followed by improved achievement for all groups, the final mean being higher in each case than the original i.t.a. pre-treatment mean.

The pattern of the mean scores for the Paragraph Meaning subtest was somewhat different from that of the Word Meaning subtest. As indicated in Figure 2, the T.O. pretreatment means for the GCRP and "Control" groups were slightly *higher* than their i.t.a. pretreatment scores. The reverse, however, was true for the ETR group.

In all three treatment groups, the final means were higher than the original i.t.a. pretreatment means.

The data for the three treatment groups on the Spelling subtests are illus-

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* For the Duncan tests, the .05 confidence level was used.

Patterns of Mean Scores -- Word Meaning Subtest
Stanford Achievement Test, Primary II, Form X (I.t.a.), W, Y, X, (T.O.)

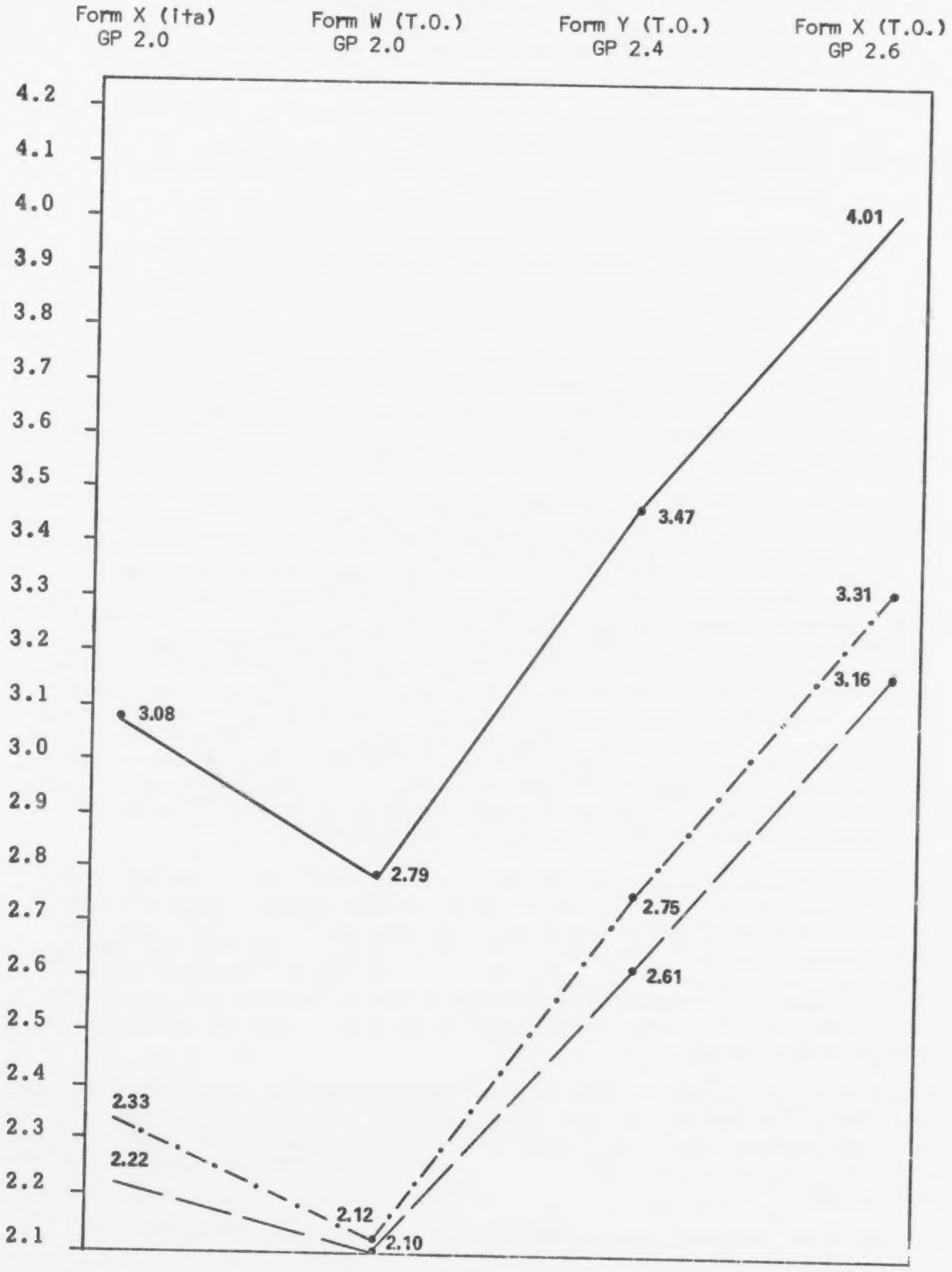

FIGURE 1

——— Greater Cleveland Reading Program
—·—·— *Early-To-Read* Series
— — Control Series

Patterns of Mean Scores -- Paragraph Meaning Subtest
Stanford Achievement Test, Primary II, Forms X (i.t.a.), W, Y, X, (T.O.)

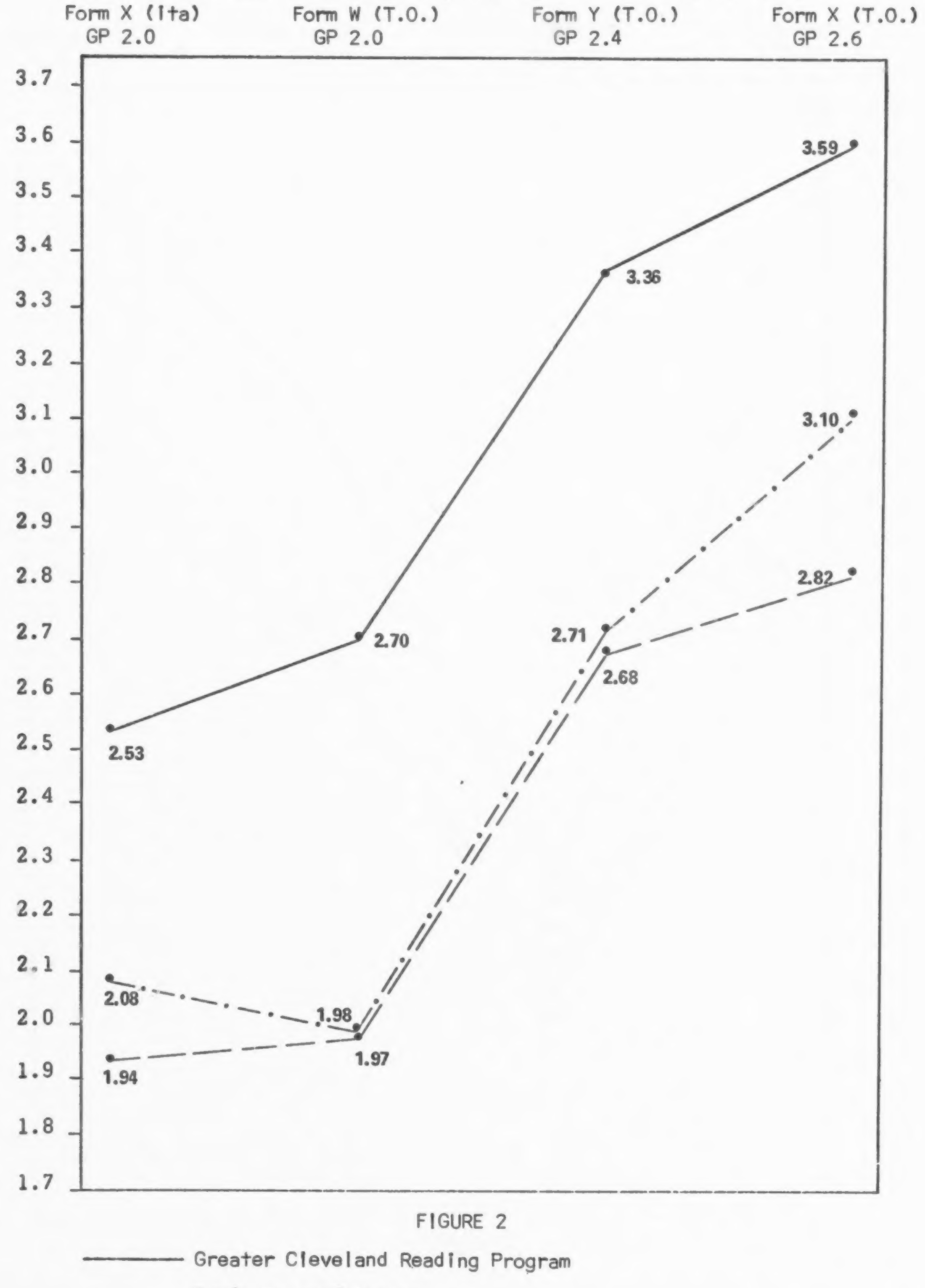

FIGURE 2

Patterns of Mean Scores -- Spelling Subtest
Stanford Achievement Test Primary II, Forms X (i.t.a.), W, Y, X, (T.O.)

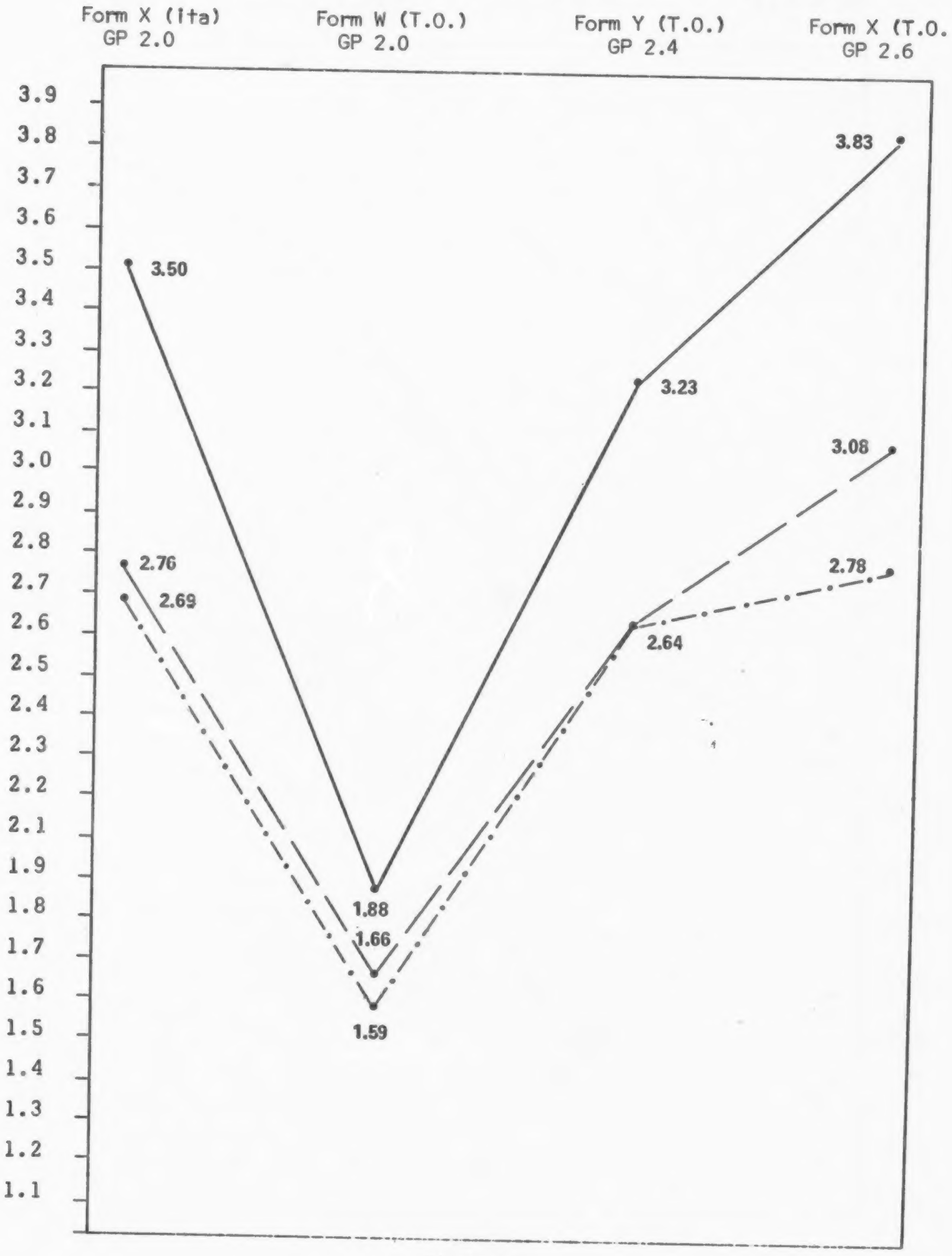

FIGURE 3

——— Greater Cleveland Reading Program
—·—·— *Early-To-Read* Series
— — Control Series

Patterns of Mean Scores -- Word Study Skills Subtest
Stanford Achievement Test, Primary II, Forms X (i.t.a.), W, Y, X, (T.O.)

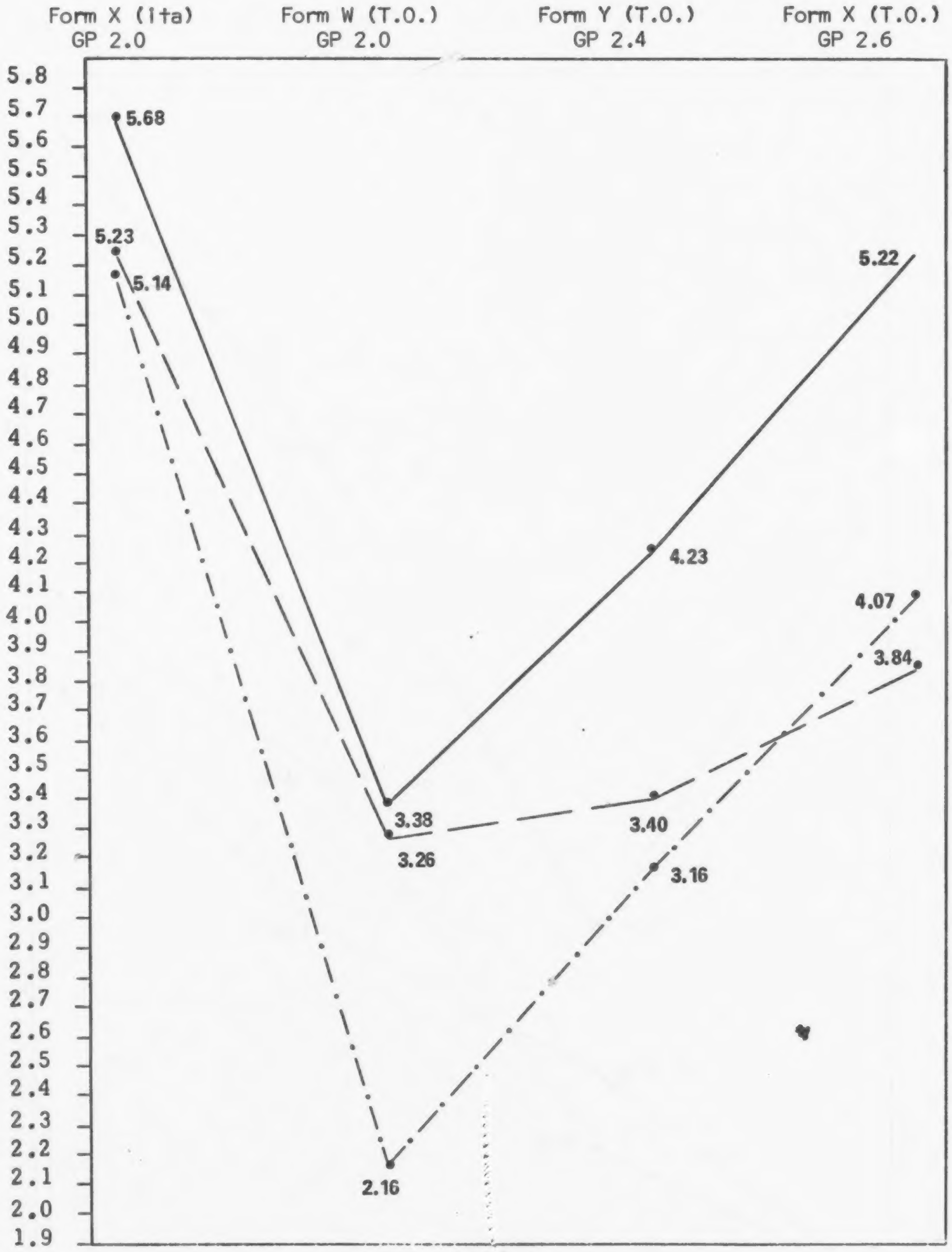

FIGURE 4

———— Greater Cleveland Reading Program
—·— · *Early-To-Read* Series
—— —— Control Series

Patterns of Mean Scores -- Language Subtest
Stanford Achievement Test, Primary II, Forms X (i.t.a.), W, Y, X, (T.O.)

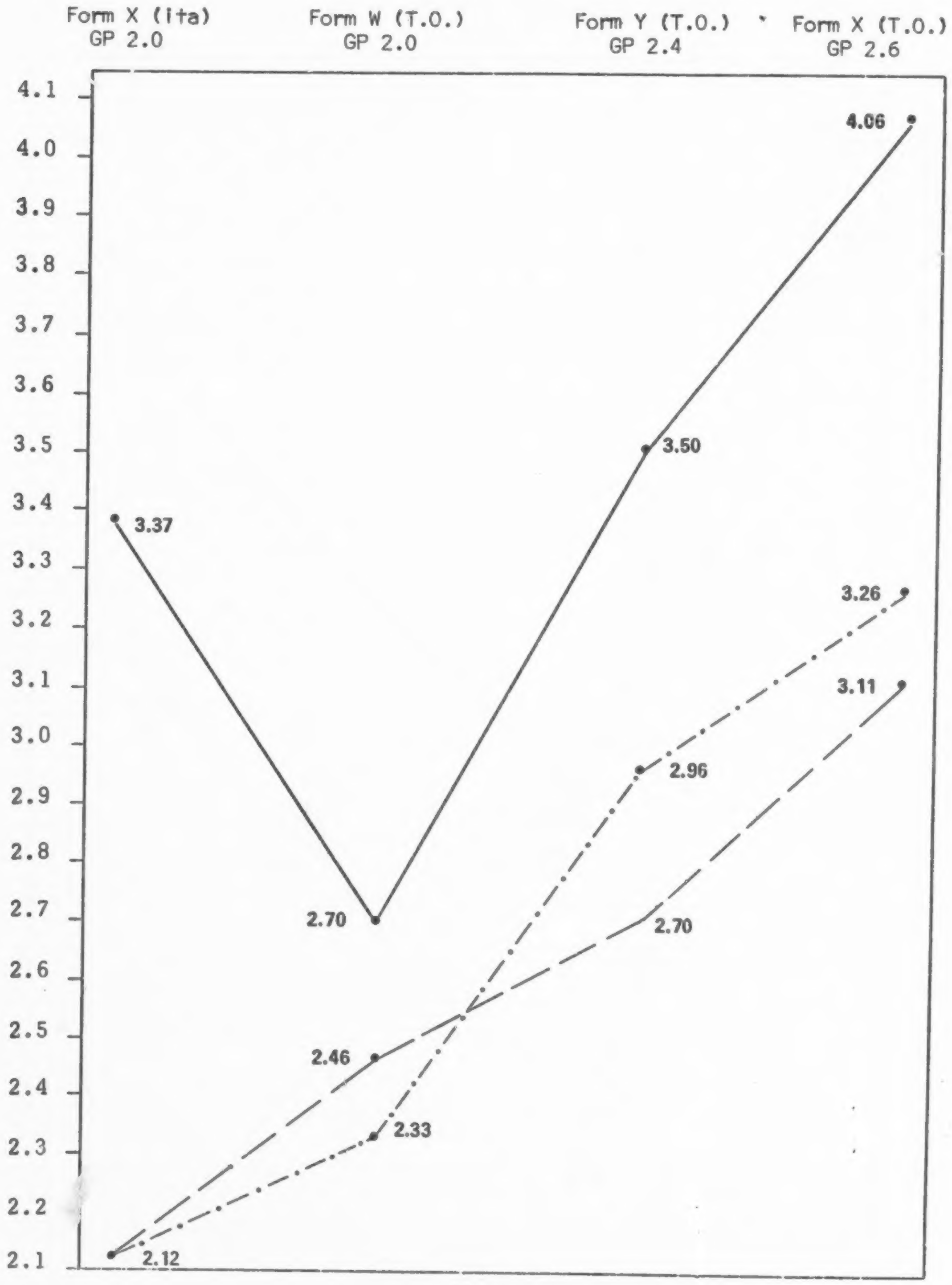

FIGURE 5

——— Greater Cleveland Reading Program
—·—·— *Early-To-Read* Series
— — — Control Series

trated in Figure 3. As shown in this figure, there was a sharp downward trend between the i.t.a. and T.O. pretreatment means, these absolute differences apparently reflecting the increased complexity of the traditional spelling tasks as opposed to the more simplified phonemic spelling system of the i.t.a. medium. This sharp downward trend, however, was followed by an almost equally sharp increase in the mean scores. The final mean on Form X (T.O.) was higher for all groups than their mean on the Form X (i.t.a.) pretreatment test.

As indicated in Figure 4, the pattern of the mean scores on the Word Study Skills subtest followed the same general trend observed in the Word Meaning and Spelling subtests of a sharp downward movement between the scores of the i.t.a. and T.O. pretreatment measures. This trend is then followed by a recovery towards higher scores on the Form Y (T.O.) and X (T.O.) tests.

It is interesting to note, however, that the final post-treatment means for the three groups were all below the level of the pretreatment i.t.a. scores.

The mean score patterns on the Language subtest are shown in Figure 5. These patterns are more similar to those of the Paragraph Meaning subtest (cf. Figure 2) than to those of the Word Meaning, Spelling, and Word Study Skills measures (cf. Figures 1, 3, and 4). Thus, the mean scores of the ETR and "Control" groups on the Form W (T.O.) pretreatment test are higher than their means on the Form X (i.t.a.) pretreatment test. The mean scores of the GCRP group, however, followed the more general downward trend between the i.t.a. and T.O. pretests. The recovery upward of the three groups' mean scores on the Form Y (T.O.) and Form X (T.O.) was similar to that exhibited on the other subtests. In all cases, the final post-treatment scores on the Form X (T.O.) were greater than the pretreatment means on the i.t.a. version of this same form.

Thus, in general, all groups at the end of the treatment period had made gains over their pretreatment level of reading achievement. Prior to formal transition, the groups in this study did not demonstrate an ability to achieve at an equivalent level in i.t.a. and T.O. when the tasks involved subtests of Word Meaning, Spelling, and Word Study Skills. On the other hand, the reading skills measured by the Paragraph Meaning and Language subtests appear to be less influenced by immediate or "forced" transition.

As in the analysis of the inter-group differences, the Duncan Multiple Range test was used to locate the statistical sources of the significant differences found between the four grade equivalent scores of each treatment group on each of the five Stanford subtests. In summary form, the results were as follows:

1. In all five tests, Word Meaning, Paragraph Meaning, Spelling, Word Study Skills, and Language, the post-treatment T.O. mean scores of all three groups were significantly higher than their pretreatment T.O. mean scores. That is, in terms of their T.O. performance, all groups made considerable progress in each of the tested areas during the time of the study.

2. In the Word Meaning, Paragraph Meaning, and Language tests, all groups made not only a significant advance over their initial T.O. performance but also over their initial i.t.a. performance. This, however, was not the case with the Word Study Skills and the Spelling tests, where the six month transition period was not sufficient to bring the group back to their initial i.t.a. achievement level.

3. On all five Stanford subtests, the post-treatment mean scores of all three groups on the Form X (T.O.) test were significantly

higher than their mean scores on Form Y (T.O.) administered two months earlier. This upward trend appears to be an indication that the subjects had not yet reached any plateau of learning in their T.O. achievement even though at this level they were in the latter stages of the study.

## Conclusion

The results of this investigation provided an affirmative answer to the question, "Do different i.t.a. transition instructional strategies positively affect the immediate post-transition level of children's achievement in Word Meaning, Paragraph Meaning, Word Study Skills, Spelling, and Language?" The magnitude of the mean score differences in favor of the children using the comprehensive Greater Cleveland Reading Program experimental series makes it apparent to us that the i.t.a. transition stage involves specific learning principles which can be identified and effectively incorporated into a sound educational program.

The implications of the evidence presented above are far reaching in scope. Among them are the following:

1. It is possible that much of the research evidence which has shown that the achievement level of i.t.a. children decreased during and following their transition experience may well be an indication of the quality of the transition and post-transition currriuculum rather than any inherent problems of transfer.

2. New data are available relating to the question of whether or not transition learning should be accepted as an automatic phenomenon, or if it should be approached as a directed instructional program. The fact that the i.t.a. children exhibited reasonable levels of achievement on the T.O. form of the pretreatment measure indicates considerable incidental T.O. learning without formal transition instruction. Given sufficient time, it is possible that the children's T.O. achievement levels might have been brought up to their i.t.a. pretreatment levels in all areas. There is, however, the question of both the time required for and the comprehensiveness of the skills covered in such an unstructured transition experience. In regard to the time element, it is questionable whether or not the demands of the total curriculum can wait for the discovery process to equip the child, when a structured program may accomplish the same tasks more efficiently and in much less time. Similarly, there seems no point in leaving to chance the acquisition of the whole range of Language Arts skills that can and should be incorporated into an adequate transition program.

3. Most important of all, the results of this research indicate that the i.t.a. transition stage of learning need not be a time when children either regress or remain at their status quo in terms of their measured reading achievement. On the contrary, the transition stage is a time when children can expand their Language Arts achievement in a continuous positive growth pattern.

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## 2. THE EFFECTS OF TRANSITION FROM I.T.A. TO T.O. ON READING AND SPELLING ACHIEVEMENT

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The first large-scale experimental study of the initial teaching alphabet (i.t.a.) began in Great Britain in 1961. It was followed by a large number of research studies in the United States. During the past six years, the majority of investigations in both countries have evaluated the efficacy of i.t.a. as against that of T.O. (traditional orthography) for beginning reading instruction. The evidence strongly supports what we have always known, that the "traditional orthography of English is a serious cause of difficulty in the early stages of learning to read and write" (Downing, 1967). Beyond that, "i.t.a.-taught children learn to read in traditional orthography (T.O.) *at least as well* as T.O.-taught children and, in some studies, exceed the achievement of the control groups" (Block, 1966).

We still are faced, however, with the issue of transition and what actually occurs. There is a dearth of research relating to the transition process. Does the i.t.a. child suffer a temporary setback when he starts reading in T.O., as has been suggested by Downing (1967)? If Downing is correct, is the setback negligible or serious?

In order to answer the foregoing questions we decided to study the transition of children who began i.t.a. in first-grade. The study reported in this article began in the Fall of 1964 and ended in March 1966, by which time in second-grade all children in the study had completed transition.

### Purpose

The main thrust of this study was to investigate the degree of difficulty met by i.t.a.-taught children transferring to reading and spelling in T.O. We asked ourselves: do children maintain their i.t.a. reading and spelling levels in T.O.? If there is a setback, is the setback negligible or serious?

Three subsidiary objectives were: (1) to evaluate the effects of levels of intelligence upon the ease or difficulty of transition in order to determine whether the transition is more difficult for children of low intelligence or high intelligence; (2) to determine whether differences in the time at which transition occurs produce differential effects in terms of the child's reading level in i.t.a. and in T.O., disregarding IQ differences, i.e., whether or not children who transfer relatively late compared to children who make an early transition perform at comparable reading and spelling levels in i.t.a. and T.O.; and (3) to evaluate the effect of intelligence upon transition in reading and spelling in i.t.a. and T.O., disregarding differences in time at which transition occurs, i.e., whether high-IQ children achieve significantly higher reading and spelling levels in i.t.a. and T.O. than low-IQ children.

There is considerable evidence suggesting that children of different intelligence levels learn in different ways. Torgerson and Adams (1954), in describing the characteristics of bright and dull children, suggest that bright children generally are able to grasp generalizations and to apply these generalizations in new learning situations without difficulty. Children in the average range of intelligence can learn generalizations but require some specific teaching in developing the proper application of these generalizations. Children of low intelligence are capable of memorizing generalizations but are generally not able to make the associations required for application without specific instruction. Since children who are taught to read by the i.t.a. medium will eventually have to make the change over to reading in T.O., the ease or difficulty of the transition will depend on their ability to apply their i.t.a.-learned skills to T.O.

An effective and successful transition, therefore, will require a certain ability to make distinctions and associations since the child must switch from i.t.a. to T.O. spelling patterns. We might expect high-IQ children to switch with little or no difficulty because of their excellent ability to associate and distinguish. On the other hand, children of lower-IQ are more likely to have difficulty in making the transition because of poorer ability to associate and distinguish.

We also might expect children of different intelligence levels to differ in their speed of progress in learning to read in the i.t.a. medium. Consequently, there are likely to be differences in the time at which transition occurs. Children of high intelligence are likely to progress more quickly than low-IQ children, and thus are likely to make an earlier transition.

In terms of the objectives of this study it was predicted that:

1. There would be no significant differences between the i.t.a. and T.O. reading and spelling levels of i.t.a.-taught children at transition regardless of the time at which transition occurred.

2. There would be no significant differences between the i.t.a. and T.O. reading and spelling levels of high-IQ (greater than 100) i.t.a. children regardless of the time at which transition occurred.

3. There would be no significant differences between the i.t.a. and T.O. reading and spelling levels of low-IQ (less than or equal to 100) i.t.a. children, regardless of the time at which transition occurred.

4. There would be no significant differences in the i.t.a. and T.O. reading and spelling levels between i.t.a.-taught children who transfer early and those who transfer late disregarding IQ difference.

5. There would be no significant differences in the i.t.a. and T.O. reading and spelling levels between i.t.a.-taught children of low-IQ and children of high-IQ, disregarding the time at which transition occurred.

## Procedure

The study was initiated during the 1964-65 school year in the East Meadow

School District in Nassau County, New York, which is a residential suburban area adjacent to New York City. The sample of four first-grade classes was randomly selected from four schools in the district where i.t.a. was being utilized for the first time. The original study sample included 104 subjects heterogeneously assigned to first-grade classrooms. The number of pupils in each class was 30, 26, and in two of the classes, 24.

All of the pupils had attended kindergarten where the program was an informal, unstructured one designed to develop language skills, concepts, and perceptual abilities in the visual and auditory area. All writing seen by the children in the kindergarten classrooms was printed in T.O. and no instructional material in i.t.a. was made available.

None of the teachers in the experimental first-grade classrooms had used i.t.a. before the start of the study but all were experienced in teaching reading in T.O. in first-grade. In addition to participating in this study, the four teachers originally were volunteers to a larger first-grade reading study (U.S.O.E. 2720) in which i.t.a. was one of three approaches being evaluated.

Prior to the opening of school in September 1964, the teachers attended a three-day workshop designed to provide a theoretical basis and practical application of teaching reading in i.t.a. using the *Early-To-Read* i.t.a. series (1963). During the workshop sessions teachers were instructed in procedures for writing and spelling in i.t.a. and in methods for teaching reading in accordance with the recommendations as suggested in the teacher's manuals.

In terms of the objectives of the study, teachers were instructed to take each child through the entire *Early-To-Read* series before transferring him to instruction in T.O. They were further instructed to inform the reading supervisor of their school when an individual child or group of children had completed *Book 7* (the last book in the series) and, hence, would no longer be instructed in i.t.a. in the classroom. Completion of *Book 7* was arbitrarily designated as the transition stage when training in i.t.a. would be terminated and, henceforth, the child would be instructed in T.O. only. Hence, in this study, transition was operationally defined as the stage when the child completed the entire *Early-To-Read* series. One is cautioned not to assume that this represented the *ideal* time for transition but was merely an arbitrary point for measuring the effects of transition. No attempt was made in this study to determine what for each child Sir James has called *le moment juste* for making the transition. When a child completed *Book 7*, equivalent forms of the Stanford Achievement Test, Primary I, were administered in i.t.a. (Form W) and T.O. (Form Y) to determine the learner's reading and spelling levels in each orthographic medium.

At the end of the first year of the study, children in the experimental first-grade classes were moved intact in class units to second-grade. Those children who had not made the transition during the first year continued to be taught to read in the i.t.a. medium in second-grade, while those who had transferred to T.O. during the first-grade continued in T.O. materials in the second-grade. A three-day workshop, similar to the workshop attended by the first-grade teachers, was conducted for four second-grade teachers who had volunteered to participate in the study. Second-grade teachers were instructed to utilize procedures in teaching reading to the i.t.a. children in accordance with the suggestions recommended in the teacher's manuals of the *Early-To-Read* series. They were instructed to inform the reading supervisor in their schools when a child who had not previously transferred to T.O. in first-grade completed *Book 7* of the *Early-To-Read* series in the second-grade. At this point the i.t.a. and T.O. editions of the Stanford Achievement Test, Primary I, were administered to the child.

A brief description of the instructional material used in the experimental classrooms follows. The *Early-To-Read* series consists of 8 readers, 5 workbooks, an alphabet book which accompanies the readers, and alphabet and vocabulary cards. In addition approximately 75 British and American library books printed in i.t.a. were available in each experimental classroom.

The *Early-To-Read* series takes the child from a stage of beginning reading in i.t.a. through the transition to traditional orthography. What differentiates this program from the typical conventional T.O. basal readers is not only the change in *medium* but modifications in *method*. The i.t.a. series emphasizes the early learning of the i.t.a. code and the sounds represented by the forty-four characters. Phonics is taught from the start through intensive training in visual and auditory discrimination skills. In addition, children are taught to write each of the i.t.a. characters. This serves as an additional mode of learning the sound-symbol correspondences and also leads to early "creative" writing. The child learns that the primary method of word identification is through the analysis and synthesis of the characters of a word. In sharp contrast to the early and heavy phonics emphasis of the *Early-To-Read* series, phonics instruction in the conventional basal readers is introduced later, more gradually, and there is less of it. Many of the phonetic and structural characteristics of words which are introduced in what, primarily, is the first year program of *Early-To-Read*, are not introduced until the second and third reader levels of the conventional basal series. This generally is during the second- and third-grades.

In addition, the word count in the *Early-To-Read* series is significantly higher -- three to four times greater than that found in conventional first-grade basal reading programs -- so that control over the presentation of new words is much less and the frequency of repetitions is reduced markedly. The stepped-up program of the *Early-To-Read* series is also reflected in the higher levels of readability of the reading selections which are generally more mature in content than that of conventional first-grade basal reader stories.

*Book 7*, the last book in the i.t.a. series, is almost entirely in T.O. and signals the start of transition. Its mean readability level is 3.0, according to the Spache Readability Formula. During this phase, children are given instruction and practice in examining and relating the most common T.O. spellings for each of the forty-four i.t.a. characters.

Teachers were instructed to spend approximately one hour per day for reading instruction and one hour and thirty minutes for related reading and language arts activities such as: recreational reading, storytelling, dramatization, reading in the content subjects, etc. Each teacher was asked to record the daily program related to reading instruction and ancillary language arts activities in a log developed by the research staff. The design of the log provided for entering the activity, materials, and duration of time spent on each activity. Teachers were instructed to keep a record of the first week of each month. To insure that the approved procedures of teaching reading were being utilized, periodic visits were made by the research staff to each classroom. These observations were recorded and checked against the teacher's log to insure the validity of the log.

## Evaluation

Test data were secured in the areas of intelligence, and reading and spelling achievement. The instrument used to measure intelligence was the Pintner-Cunningham Primary Test, Form A, Revised, 1964 which was administered in September 1964, prior to the start of the experimental program. Alternate forms of the Stanford Achievement Test, Form W (i.t.a.) and Form Y (T.O.) were administered to each subject upon completion of the *Early-To-Read* series. The subtests used to measure reading achievement were: word reading, paragraph meaning and word study skills. Spelling ability was measured by the spelling subtest of the Stanford Achievement Test. The i.t.a. and T.O. versions of each subtest were given in consecutive order. One-half of the transition population was given the i.t.a. form of each subtest first and then the T.O. form of that subtest was administered. For the other half of the sample, this procedure was reversed with the T.O. form administered first, followed by the i.t.a. form. This procedure was utilized in order to control for the possibility of practice effect on taking alternate forms of the same test. All tests were administered by the reading supervisors of the participating school district with teachers serving as proctors. Test scoring was done by a panel of trained people under the supervision of a research co-ordinator. Tests were scored independently by two people to insure accuracy. Raw scores on the Stanford Achievement Test were converted to grade equivalent scores.* It should be pointed out that one should be cautious in interpreting the i.t.a. scores since, according to the publisher, "no norms are provided for the i.t.a. version of the tests. It is not known whether or not the national norms for the regular T.O. version would apply.**

To facilitate analysis of the data, three transition periods were arbitrarily utilized: children who made the earliest transition, during May-June 1965 in first-grade, were designated as transition group I; transition group II included those children who made the transition between October and November 1965, in second-grade; transition group III was composed of those children who were last to make the transition in this study, between January and March 1966, in second-grade.

Statistical Analysis

The central purpose of this study was to determine the degree of difficulty met by i.t.a.-taught children transferring to reading and spelling in T.O. Comparisons were made between the i.t.a. and T.O. grade-equivalent scores on each of the separate reading subtests and on the spelling measure of the Stanford Achievement Test for children in each of the three transition groups and for the total sample. In addition, separate comparisons were made for children of high intelligence (greater than 100 IQ) and those children of low intelligence (IQ less than or equal to 100) within each of the transition groups and for all of the children within each IQ category, disregarding the differences in time of transition.

To determine the effect of differences in time at which transition occurred, comparisons were made on each of the dependent variables in reading and spelling achievement, in i.t.a. and T.O., between children who were in the early transition group (May-June in first-grade) and children who were in the late transition group (January-March in second-grade), disregarding IQ differences.

Separate analyses were also made comparing higher-IQ children with lower-IQ children in reading and spelling achievement, in i.t.a. and in T.O., disregarding differences in time of transition. For each of the analyses, critical ratios were computed between mean grade equivalent scores on each of the reading measures and on the spelling subtest to determine whether the observed differences between means were significant or could have occurred by chance.

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* According to the publisher of the Stanford Achievement Test, differences in difficulty among the various forms of the test are adjusted in the grade equivalence norms to insure equivalency of forms.

** Letter from Harcourt, Brace & World to Dr. J. R. Block, Executive Director, i.t.a. Foundation, dated May 15, 1967.

## Results and Discussion

Table 1 reports the means and standard deviations for each of the three transition sub-groups and for the total experimental sample on IQ, as measured by the Pintner-Cunningham Primary Test. Critical ratios were computed between each of the possible pairs of mean IQ scores for the three transition groups. These analyses revealed that there were no significant differences between the May-June and November-December transition groups and between the November-December and January-March transition groups. A significant difference did occur, however, between the May-June (early transition) and January-March (late transition) groups favoring those children who transferred in first-grade over those children who did not transfer to T.O. until mid-year of second-grade. This difference was significant at the .01 level of confidence, thus suggesting that differences this great would occur less than one time in one hundred as a result of chance. This result suggests that children with higher-IQs were more likely to make an earlier transition than children of lower-IQs.

TABLE 1

MEANS AND STANDARD DEVIATIONS FOR IQ SCORES AS
MEASURED BY THE PINTNER-CUNNINGHAM PRIMARY TEST

| Transition Group | N | Mean | S D |
|---|---|---|---|
| May-June 1965<br>(first-grade) | 63 | 107.63 | 11.88 |
| November-December 1965<br>(second-grade) | 16 | 102.56 | 12.30 |
| January-February-<br>March 1966<br>(second-grade) | 25 | 96.20 | 11.91 |
| Total Sample | 104 | 104.11 | 12.88 |

## Transition from i.t.a. to T.O.

The first hypothesis to be tested stated that there would be no significant differences between the i.t.a. and T.O. reading and spelling levels of i.t.a.-taught children at transition regardless of the time at which transition occurred. Table 2 reveals the mean i.t.a. and T.O. grade equivalent scores in spelling and on each of the reading subtests of the Stanford Achievement Test for each of the three transition groups and for the total sample. For the May-June transition group (children who made the transition between the ninth and tenth months in first-grade) there were no significant differences between the i.t.a. and T.O. levels in paragraph meaning and in spelling, but significant differences were found in word reading and word study skills, with the T.O. mean slightly higher in word reading and the i.t.a. mean greater in word study skills. In word reading, the difference was significant at the .05 level of confidence. However, the minor difference between 3.1 and 3.2 (one-tenth of a school year) was negligible and would not be considered to have practical significance. The difference between the i.t.a. and T.O. means in word study skills, however, is great and would be considered as

## TABLE 2

## TRANSITION FROM i.t.a. TO T.O. AS MEASURED BY THE STANFORD ACHIEVEMENT TEST

| | | | S A T | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | WORD READING | | | PARAGRAPH MEANING | | | WORD STUDY SKILLS | | | SPELLING | | |
| Transition Group | N | Test | M | S | t | M | S | t | M | S | t | M | S | t |
| May-June 1965 (first-grade) | 63 | T.O. (Form Y) | 3.1 | .50 | 2.48* | 2.9 | .62 | 1.70 | 3.5 | 1.25 | 5.70** | 2.6 | .53 | 1.87 |
| | | i.t.a. (Form W) | 3.2 | .47 | | 2.8 | .56 | | 4.4 | 1.40 | | 2.7 | .44 | |
| November-December 1965 (second-grade) | 16 | T.O. (Form Y) | 3.3 | .43 | .00 | 3.5 | .56 | 4.31** | 3.6 | 1.02 | 3.03** | 3.1 | .30 | 3.12** |
| | | i.t.a. (Form W) | 3.3 | .35 | | 2.9 | .63 | | 4.5 | .97 | | 2.8 | .27 | |
| January-February-March 1966 (second-grade) | 25 | T.O. (Form Y) | 3.0 | .46 | .00 | 2.8 | .60 | 1.15 | 3.4 | 1.22 | 4.44** | 2.6 | .58 | .20 |
| | | i.t.a. (Form W) | 3.0 | .49 | | 2.7 | .77 | | 4.3 | 1.18 | | 2.6 | .53 | |
| Total Sample | 104 | T.O. (Form Y) | 3.1 | .49 | 1.83 | 2.9 | .66 | 3.60** | 3.5 | 1.21 | 7.78** | 2.7 | .55 | .54 |
| | | i.t.a. (Form W) | 3.2 | .47 | | 2.8 | .63 | | 4.4 | 1.29 | | 2.7 | .45 | |

* Significant at the .05 level of confidence

** Significant at the .01 level of confidence

having practical significance as well as statistical significance.

For the November-December transition group, in which the sample size was very small (16), there was no significant difference between the i.t.a. and T.O. levels in word reading, but there were significant differences between means in paragraph meaning, word study skills and spelling, with all differences significant at beyond the .01 level of confidence. In paragraph meaning and spelling, the mean T.O. grade equivalent scores were significantly higher, while in word study skills, the i.t.a. performance was very superior. The results showing that this group of children performed better on the T.O. measures in paragraph meaning and spelling should be interpreted cautiously since these results would not ordinarily be expected. One possible explanation for the superior T.O. performance may be that the paragraph meaning and spelling measures on Form Y (T.O. edition) of the Stanford Achievement Test are easier than on Form W (i.t.a. edition). This is a tentative hypothesis and subject to further examination of these two forms of the Stanford Achievement Test. Also, it is important to keep in mind that the sample size of the group was very small and, hence, the results may be spurious.

For children in the January-March transition group, no significant differences were found between their i.t.a. and T.O. grade equivalent scores in word reading, paragraph meaning and spelling; but, again, as was true with the other transition groups, a significant difference was observed in word study skills, with the T.O. mean greater than the i.t.a. mean. The difference was significant at the .01 level of confidence. The results suggest that children who spend a longer time in the i.t.a. program and thus transfer at a later time, are just as successful in making the transition as children who make an early transition in first-grade; albeit, it took the children who made transition in mid-second-grade a longer time to complete the *Early-To-Read* series. It is interesting to note that the i.t.a. and T.O. reading and spelling mean grade equivalent scores observed for children in the late transition group were practically the same as those observed for children in the early transition group.

For the total experimental sample, no significant differences occurred between the i.t.a. and T.O. reading levels in word reading and spelling, but significant differences were found in paragraph meaning with a higher T.O. mean, and in word study skills with the i.t.a. mean greater than the T.O. mean. In terms of practical significance, the difference between mean grade equivalent scores in paragraph meaning was negligible, but the difference between means in word study skills, favoring the i.t.a. performance was nearly one grade level (or year) higher.

These findings suggest that children generally maintain their i.t.a. reading skill in T.O. regardless of the time at which transition occurs, and that there is no significant loss, or relatively little loss of practical significance in the areas of word recognition, comprehension and spelling. There is, however, significant slippage in the area of word analysis in which the i.t.a. level is consistently higher than the T.O. level, regardless of the time at which children make the transition, whether in first- or second-grade. This result testifies to the phonemic consistency of the i.t.a. medium and the ease with which the child can decode.

## Transition for High-IQ (greater than 100) Pupils

Hypothesis two stated that there would be no significant differences between the i.t.a. and T.O. reading and spelling levels of high-IQ i.t.a. children regardless of the time at which transition occurred. Table 3 presents data comparing the i.t.a. and T.O. reading and spelling results for the high-IQ pupils within each of the transition groups and for the total high-IQ sample. Of the 61 pupils in the high-IQ category, 45 made the transition from i.t.a.

## TABLE 3

### TRANSITION FROM i.t.a. TO T.O. AS MEASURED BY THE STANFORD ACHIEVEMENT TEST FOR HIGH I.Q. (GREATER THAN 100) PUPILS

| | | | SAT | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | WORD READING | | | PARAGRAPH MEANING | | | WORD STUDY SKILLS | | | SPELLING | | |
| Transition Group | N | Test | M | S | t | M | S | t | M | S | t | M | S | t |
| May-June 1965 (first-grade) | 45 | T.O. (Form Y) | 3.1 | .53 | 1.88 | 2.9 | .65 | 1.78 | 3.7 | 1.19 | 4.68** | 2.7 | .52 | .75 |
| | | i.t.a. (Form W) | 3.2 | .47 | | 2.8 | .54 | | 4.5 | 1.22 | | 2.6 | .44 | |
| November-December 1965 (second-grade) | 9 | T.O. (Form Y) | 3.2 | .39 | 1.35 | 3.7 | .25 | 3.37** | 3.7 | 1.09 | 2.58** | 3.0 | .25 | 2.42* |
| | | i.t.a. (Form W) | 3.4 | .25 | | 3.0 | .65 | | 5.0 | .65 | | 2.7 | .34 | |
| January-February-March 1966 (second-grade) | 7 | T.O. (Form Y) | 3.2 | .44 | .11 | 3.0 | .84 | .31 | 4.0 | 1.32 | .38 | 2.8 | .54 | .05 |
| | | i.t.a. (Form W) | 3.2 | .50 | | 3.0 | .94 | | 4.1 | 1.29 | | 2.8 | .62 | |
| Total Sample | 61 | T.O. (Form Y) | 3.1 | .51 | 2.23* | 3.0 | .70 | 3.02** | 3.7 | 1.20 | 5.23** | 2.8 | .51 | .02 |
| | | i.t.a. (Form W) | 3.2 | .47 | | 2.8 | .63 | | 4.5 | 1.18 | | 2.8 | .45 | |

* Significant at the .05 level of confidence

** Significant at the .01 level of confidence

to T.O. between the ninth and tenth month in first-grade. For this early transition group, no significant differences were observed between their i.t.a. and T.O. performance on measures of word reading, paragraph meaning and spelling. The difference between grade equivalent means on each of these subtests was negligible, averaging one-tenth of a year on each subtest. A significant difference between the i.t.a. and T.O. means was found in word study skills, with the i.t.a. mean the higher one by eight-tenths of a year.

For the November-December transition group, no significant difference was observed between the i.t.a. and T.O. means in word reading. Significant differences favoring the T.O. performance occurred in paragraph meaning and spelling, with the difference significant at the .01 and .05 level of confidence, respectively. The only significant difference favoring the i.t.a. performance for this transition group was observed in word study skills where the difference was significant at the .01 level of confidence. It should be noted that the sample size of this transition group was extremely small (9), and hence the results should be interpreted cautiously, particularly for those subtests showing a significantly higher T.O. level.

For the January-March transition group of high-IQ children who made the transition between the fifth and seventh months in second-grade, there were no significant differences between the i.t.a. and T.O. means on any of the reading and spelling measures of the Stanford Achievement Test. With the exception of word study skills, the i.t.a. and T.O. grade equivalent means on each of the subtests were identical.

For the total high-IQ population, disregarding the time at which transition was made, significant differences between means occurred in word reading, paragraph meaning and word study skills. In paragraph meaning the observed difference favoring the T.O. performance was significant at the .01 level of confidence. The i.t.a. means were significantly higher in word reading and paragraph meaning with the difference significant at the .05 and .01 level of confidence, respectively. No significant difference was observed between means in the area of spelling, suggesting that when the high-IQ children transferred from i.t.a. to T.O., their spelling performance in T.O. was comparable to their i.t.a. spelling achievement. The results, generally, suggest that high-IQ pupils transfer from i.t.a. to T.O. with relatively little or no significant loss in word recognition, comprehension and spelling. The most significant setback occurs in the area of word analysis in which the i.t.a. performance is almost always higher than the T.O. performance. This result suggests that the more phonemically consistent i.t.a. medium is easier to decode than are the inconsistencies of traditional orthography.

Transition for Low-IQ (less than or equal to 100) Pupils

The third hypothesis of this study stated that there would be no significant differences between the i.t.a. and T.O. reading and spelling levels of low-IQ i.t.a. children regardless of the time at which transition occurred. Table 4 reveals the mean i.t.a. and T.O. grade equivalent scores for low-IQ children within each of the three transition groups and for the total sample of 43 children. In the May-June transition group, 18 children transferred to T.O. during the first-grade. For children in this group, no significant differences were observed between their i.t.a. and T.O. levels in word reading and paragraph meaning. Significant differences occurred in spelling and word study skills in favor of the i.t.a. performance. On each subtest analysis, the difference between means was significant at beyond the .01 level of confidence. The largest difference occurred in word study skills where the discrepancy between the i.t.a. and T.O. grade equivalent means was one year.

For low-IQ pupils who made the transition between November-December in second-grade, there were no significant differences between means in word reading,

## TABLE 4

TRANSITION FROM I.t.a. TO T.O. AS MEASURED BY THE STANFORD ACHIEVEMENT TEST
FOR LOW I.Q. (LESS THAN OR EQUAL TO 100) PUPILS

|  |  |  | SAT |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | WORD READING |  |  | PARAGRAPH MEANING |  |  | WORD STUDY SKILLS |  |  | SPELLING |  |  |
| Transition Group | N | Test | M | S | t | M | S | t | M | S | t | M | S | t |
| May-June 1965 (first-grade) | 18 | T.O. (Form Y) | 3.2 | .40 | 1.67 | 2.8 | .56 | .49 | 3.1 | 1.28 | 3.18** | 2.4 | .52 | 3.44** |
|  |  | I.t.a. (Form W) | 3.3 | .46 |  | 2.7 | .60 |  | 4.1 | 1.75 |  | 2.7 | .44 |  |
| November-December 1965 (second-grade) | 7 | T.O. (Form Y) | 3.4 | .46 | 1.33 | 3.3 | .72 | 2.53* | 3.5 | .91 | 1.93 | 3.1 | .35 | 1.87 |
|  |  | I.t.a. (Form W) | 3.2 | .41 |  | 2.7 | .57 |  | 3.9 | .99 |  | 2.8 | .13 |  |
| January-February-March 1966 (second-grade) | 18 | T.O. (Form Y) | 2.9 | .45 | .05 | 2.7 | .43 | 1.11 | 3.2 | 1.10 | 5.39** | 2.5 | .58 | .23 |
|  |  | I.t.a. (Form W) | 2.9 | .45 |  | 2.5 | .64 |  | 4.4 | 1.12 |  | 2.6 | .47 |  |
| Total Sample | 43 | T.O. (Form Y) | 3.1 | .47 | .31 | 2.8 | .58 | 2.0 | 3.2 | 1.16 | 5.95** | 2.5 | .58 | .90 |
|  |  | I.t.a. (Form W) | 3.1 | .48 |  | 2.6 | .62 |  | 4.2 | 1.41 |  | 2.7 | .43 |  |

* Significant at the .05 level of confidence
** Significant at the .01 level of confidence

word study skills and spelling. A significant difference between means was observed in paragraph meaning, in favor of the T.O. performance. This difference was significant at the .05 level of confidence. The sample size for this transition group was extremely small (7).

For the group of low-IQ children who were last to make the transition, between January and March in second-grade, no significant differences were found between their i.t.a. and T.O. achievement in word reading, paragraph meaning and spelling. A significant difference was observed in the area of word study skills in which the difference between grade equivalent means was one and two-tenths years in favor of the i.t.a. performance. This difference was significant at beyond the .01 level of confidence. For the total transition sample of low-IQ children, no significant differences were revealed between the i.t.a. and T.O. means in word reading, paragraph meaning and spelling. Only in the area of word study skills was a significant difference (.01 level of confidence) observed favoring the i.t.a. performance.

The pattern of results for low-IQ pupils was relatively similar to that observed for high-IQ pupils. Low-IQ pupils generally maintained their i.t.a. reading and spelling skill in T.O., with the exception of their performance in the area of word analysis. There were virtually no mean differences of statistical significance or of practical significance between the i.t.a. and T.O. reading level of low-IQ children, regardless of the time at which transition occurred. In the area of T.O. spelling ability, the data suggest that there is no serious loss, or relatively little loss, of statistical and practical significance when the transition is made from i.t.a. to T.O.

It is interesting to note that 18 of the 43 children in the low-IQ group made the transition within the first year with results equal to that achieved by children who did not make the transition until the second year, and that 16 of the 61 high-IQ children did not make the transition until the second year. These results suggest that factors other than intelligence influence progress in learning to read.

### Early Transition Versus Late Transition

The fourth hypothesis of this study stated that there would be no significant differences in the i.t.a. and T.O. reading and spelling levels between i.t.a.-taught children who transfer early and those who transfer late disregarding IQ differences. The results of the subtest analyses are reported in Table 5. As can be seen in Table 5, means are reported on each of the subtests of the T.O. edition of the Stanford Achievement Test for children in the early transition group (first-grade) and those in the late transition group (mid-second-grade). The results show no significant differences on any of the reading and spelling subtests which were administered in T.O. The mean grade equivalent scores of the early transition group were slightly higher on each of the reading subtests than were the means of the children in the late transition group. The T.O. means on the spelling subtest were similar for both transition groups.

Comparisons between the early transition group and the late transition group on the i.t.a. edition of the Stanford Achievement Test show no significant differences in paragraph meaning, word study skills and spelling. Only in word reading was the i.t.a. mean grade equivalent score of the early transition group significantly higher than that of the late transition group. The difference between grade equivalent means was two-tenths of a grade (or year). This difference was significant at the .05 level of confidence. The mean i.t.a. scores on each of the subtests for the early transition group were slightly higher than the means of the late transition group.

These findings suggest that disregarding IQ differences, when children complete *Book 7* of the *Early-To-Read* series and are no longer instructed in the

TABLE 5

COMPARISON OF i.t.a. AND T.O. READING AND SPELLING LEVELS (GRADE EQUIVALENT SCORES) BETWEEN EARLY TRANSITION AND LATE TRANSITION GROUPS DISREGARDING IQ DIFFERENCES

| | | | SAT | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | WORD READING | | | PARAGRAPH MEANING | | | WORD STUDY SKILLS | | | SPELLING | | |
| Transition Group | N | Test | M | S | t | M | S | t | M | S | t | M | S | t |
| Early Transition Group (first-grade) | 63 | T.O. Form Y | 3.1 | .50 | .98 | 2.9 | .62 | .66 | 3.6 | 1.25 | .30 | 2.6 | .53 | .13 |
| Late Transition Group (second-grade) | 25 | T.O. Form Y | 3.0 | .46 | | 2.8 | .56 | | 3.4 | 1.22 | | 2.6 | .58 | |
| Early Transition Group (first-grade) | 63 | i.t.a. Form W | 3.2 | .47 | 2.11* | 2.8 | .56 | .58 | 4.4 | 1.40 | .30 | 2.7 | .44 | .94 |
| Late Transition Group (second-grade) | 25 | i.t.a. Form W | 3.0 | .49 | | 2.7 | .77 | | 4.3 | 1.18 | | 2.6 | .53 | |

* Significant at the .05 level of confidence

i.t.a. medium, those who make the transition in the middle of the second-grade (or year) attain a level of reading and spelling achievement in i.t.a. and in T.O. practically equal to that attained by children who make an early transition in the first year, but at a later time.

### Lower IQ Pupils Versus Higher-IQ Pupils

Hypothesis 5 stated that there would be no significant differences in the i.t.a. and T.O. reading and spelling levels between i.t.a.-taught children of low-IQ and children of high-IQ, disregarding the time at which transition occurred. Table 6 reports the mean grade equivalent scores on each subject of the Stanford Achievement Test, both on the i.t.a. and T.O. editions. On the i.t.a. measure, there were no significant differences between the means observed for the high-IQ group and the means of the low-IQ group in word reading, paragraph meaning and spelling. There was a significant difference between means in word analysis, with the high-IQ group attaining a higher grade equivalent score on the T.O. subtest. This result is further verification of the ease and consistency of the i.t.a. medium. In i.t.a., intelligence does not seem to be a crucial factor in developing skill in word analysis; but in T.O., the higher-IQ children are better able to deal with the inconsistencies of traditional orthography than are the lower-IQ children. In summary, when children complete *Book 7* of the *Early-To-Read* series, children of lower-IQs attain virtually the same level of reading and spelling proficiency in i.t.a. and in T.O. as that achieved by children of higher-IQs, but generally at a later time.

### Summary and Conclusion

The purpose of this study was to investigate the ease or difficulty of transition from i.t.a. to T.O. for children who were initially taught to read in the i.t.a. medium in the first-grade. Subsidiary objectives of this study were (1) to evaluate the effect of intelligence upon the ease or difficulty of transition in order to determine whether the transition is more difficult for children of low intelligence or high intelligence; (2) to determine whether or not children who make a late transition attain a level of reading and spelling proficiency in i.t.a. and T.O. equal to that achieved by children who make an early transition, disregarding IQ differences; and (3) to determine whether high-IQ children achieve significantly higher reading and spelling levels in i.t.a. and T.O. than low-IQ children, disregarding differences in the time at which transition occurs.

Transition was operationally defined as the stage when the child completed *Book 7*, the last book in the *Early-To-Read* i.t.a. series and was no longer being instructed in the i.t.a. medium in the classroom. The study began in the Fall of 1964 when the children entered the first-grade. The sample was composed of 104 children in four first-grade classrooms. Alternate forms of the Stanford Achievement Test, one printed in T.O. and the other transliterated into i.t.a., were administered *at* transition. To facilitate analyses of the data, three points of transition were utilized: (1) children who made the transition between May and June in the first-grade; (2) children who made the transition in second-grade, between October and November; and (3) children who were last to make the transition in the second-grade, between January and March.

An examination of the effect of transition on the levels of achievement attained both in i.t.a. and in T.O. suggest that children instructed in the initial teaching alphabet attained comparable levels of achievement in reading and spelling in i.t.a. and in T.O. They generally maintained their i.t.a. reading and spelling skill in the orthodox alphabet, regardless of the time transition occurred. The results seem to indicate that there was no sig-

## TABLE 6

COMPARISON OF i.t.a. AND T.O. READING AND SPELLING LEVELS (GRADE EQUIVALENT SCORES) BETWEEN HIGH IQ (GREATER THAN 100) AND LOW IQ (LESS THAN OR EQUAL TO 100) PUPILS DISREGARDING DIFFERENCES IN TIME OF TRANSITION

|  |  |  | SAT |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | WORD READING |  |  | PARAGRAPH MEANING |  |  | WORD STUDY SKILLS |  |  | SPELLING |  |  |
| Transition Group | N | Test | M | S | t | M | S | t | M | S | t | M | S | t |
| High IQ Group | 61 | T.O. Form Y | 3.1 | .51 | .36 | 3.0 | .70 | 1.81 | 3.7 | 1.20 | 2.19* | 2.8 | .52 | 1.55 |
| Low IQ Group | 43 | T.O. Form Y | 3.1 | .47 |  | 2.8 | .58 |  | 3.2 | 1.16 |  | 2.6 | .58 |  |
| High IQ Group | 61 | i.t.a. Form W | 3.2 | .46 | 1.35 | 2.8 | .63 | 1.64 | 4.5 | 1.18 | 1.31 | 2.8 | .45 | 1.20 |
| Low IQ Group | 43 | i.t.a. Form W | 3.1 | .48 |  | 2.6 | .62 |  | 4.2 | 1.41 |  | 2.7 | .43 |  |

* Significant at the .05 level of confidence

nificant loss, or relatively little loss of practical significance, in word recognition, comprehension and spelling. In addition the results suggest that regardless of the time at which transition occurs, or level of intelligence, children generally attained comparable reading and spelling levels in both i.t.a. and T.O., although the time of transition was generally later for the low-IQ children. Only in the area of word analysis was the i.t.a. level consistently higher than the T.O. level in virtually every comparison regardless of the intelligence level or time at which transition occurred. The i.t.a. reading level in the area of word analysis was higher in most cases by an average of approximately one grade level (or one year) for the total transition sample and for each of the transition groups, except for two very small subsamples.

To summarize the results of the study, it would appear that introducing the initial teaching alphabet to children in first-grade produces no appreciable loss, or relatively little loss, of practical significance in T.O. reading and spelling at the time of transition. Furthermore, disregarding differences in levels of intelligence and differences in time at which transition occurs, children who complete the *Early-To-Read* i.t.a. series generally can successfully transfer their i.t.a. reading and spelling skills to reading and spelling in traditional orthography.

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## C. LINGUISTICS AND WRITING

What many perceive to be one of the most exciting advantages inherent in the use of an alphabetic system which has a close sound to symbol relationship is the opportunity for the learner to express himself with it in writing. Elsewhere, the editor of these proceedings has commented on what persons in the field of reading have perceived to have been the "fringe benefits" of the use of i.t.a. including the development of writing skills, attitudes, self-concept, etc. (Block, 1966). It is argued in that article that the so-called "fringe benefits" of i.t.a. may, in fact, be its most exciting benefits. They may well be sufficient to justify the use of the alphabet almost independently of the child's ability to read (provided that he reads at least as well with this medium as with T.O.). While most adults are adequately literate, they may not get as much enjoyment from reading as we would hope. Perhaps at least as important even as adults our ability to express ourselves in writing operates at a very low level. Typically we do not enjoy writing to relatives or to execute business transactions. Report writing is *very* difficult for us, and one can only guess the number of master theses and doctoral dissertations that have gone unwritten because the graduate student was unable to overcome his fear of the blank sheet of paper.

When one reads reports of the extensive writing of i.t.a. children, a spark of hope develops that, perhaps, they may be different adults as a result of this early experience and reinforcement.

Probably the most disquieting paper in this volume is the one in this section by Mr. George Riemer. He provides us with a close look at our curriculum in the teaching of English in elementary school and cites statistics emphasizing our disproportionate concern with reading as opposed to writing. Mr. Riemer's paper deals with this basic issue, and, with or without i.t.a., the problem is serious. He points out that there are few, if any, measures of writing ability suitable for very young children. On the other hand, the number of measures of reading ability are legion. He presents an important challenge to educators in general, and perhaps, the United States Office of Education in particular. His question focuses upon the extent to which i.t.a. can help reduce the magnitude of the problem. He has certainly made us keenly aware of its existence.

The paper by Mrs. Lenore Sandel and Drs. Harvey Alpert and Harold Tanyzer represents a study to investigate the extent to which writing skills may be developed in first-grade children through the use of i.t.a. Fry (1967) has noted that most of the studies of the writing of i.t.a. children have failed to use T.O. control groups with an equal opportunity for writing. It has been suggested that some of the success i.t.a. children experience in reading are, at least in part, the result of having engaged in as much writing as they usually do. It is important to remember that T.O. does not readily lend itself to such a procedure. One study attempting to investigate the question of writing opportunity for i.t.a. children deliberately prevented them from writing and still found a significant difference in reading ability (Bosma and Farrow, 1965).

Finally, the paper by Mrs. Harold Seymour reminds us once again that i.t.a. is not synonomous with reading; and that reading, in turn, is not synonomous with English. Both her paper and Mr. Riemer's deal with i.t.a. as a device for working with the English language, and each presents a series of suggestions as to how it may be used. Similarly, a recent publication by Sceats (1967) discusses i.t.a. and its use in the development of linguistic ability in children in Great Britain.

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## 1. THE GREAT GRADE SCHOOL SCANDAL *

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Three years ago, while collecting impressions for a book about writing instruction, I telephoned the New York Public Library and asked Information how many articles were listed under "writing" in the Education Index of the Reader's Guide to Periodical Literature. Information went off the line, then came back.

"Do you mean 'handwriting'?"

"No, I mean writing, ordinary prose writing. Like I'm a writer."

"Under 'writing', all that's listed is *penmanship*."

"Would you try looking under 'composition'?"

Information went off. "All I find under 'composition', sir, is *music* and *art*," she reported after some moments.

"But 'writing' must be there some place."

Information became suspicious. "Is this for a contest?"

"No."

Information disappeared again. When she came back, she said, "You'll have to come down yourself, sir. I can't find it and I just don't have any more time to look for you."

I did eventually get down to the library where I made an appalling discovery. But before doing so, I had a telephone conversation with someone in the U. S. Office of Education who sounded very much like "Information" at the New York Library.

I knew the O.E.O. had a Reading Expert, Dr. Warren Cutts. Naively I see now, I telephoned the Office and asked to speak with the "Writing Expert."

The gentleman who came to the telephone asked: "Do you mean *hand*writing?"

"No, I mean writing -- prose composition."

"There is no specialist like that." He added: "Writing is part of English."

"Isn't reading a part of English, too?"

The gentleman coughed. "Why, yes, so it is." He paused to cough again. I almost expected he would ask 'Is this for a contest?' But, instead, he added: "Don't ask me how they came unstuck. I don't know."

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* Title is from *How They Murdered The Second R*, by George Riemer, W. W. Norton & Company, 1967.

These two telephone calls led me to what I call THE GREAT GRADE SCHOOL SCANDAL. We truly do not have a curriculum of writing instruction. There is an expansive bias which reaches as far as the eye can see from horizon to horizon over education. It is, in fact, a duplex bias. Its first fold is that reading is *THE* key to educational success and to all later learning. Its second fold is that writing -- prose composition, that is -- is a special art, the talent to write possessed by a gifted few.

The uneven push exerted by these two concepts distorts our entire educational plan. Its immediate effect is that Reading and Writing are warped away from each other.

Now this is bad in itself for, like listening and talking, like inhaling and exhaling, they belong together. They are complementary forms of interpersonal communication. Each makes the other intelligible. Reading is an extension of listening as writing is an extension of talking. We cannot under-exercise or over-exercise one without loss to the other. No one says inhaling is more important than exhaling. No one specializes in inhaling while neglecting exhaling, nor does anyone regard inhaling as essential for life and growth while regarding exhaling as a unique rare talent possessed by a gifted few. The teacher who believes in promoting reading while neglecting writing hangs defeat on her children even as she launches them on their school careers.

Yet in announcements, reports, bulletins, research centers, workshops, regional conferences, national and international conferences, even in international i.t.a. conferences, reading is discussed and treated apart from elementary school writing and alone.

The U. S. Congress of 1964 officially recognized the 'unsticking' of reading from English by amending the National Defense Education Act of 1958 in these words; "to strengthen instruction in reading, English and other subjects."

The Reading Bias

The Education Index of the Reader's Guide to Periodical Literature lists articles about writing under "English -- Composition." Some articles can be found wedged in another sub-division under English called "creative activity."

I counted all articles listed in the Index from July-1938 to June-1963. I didn't inspect the articles themselves. Neither did I count articles about spelling, which is related to writing. As for the articles about reading, I counted only those headed "reading." I did not count articles headed "literature" and "library", which were also articles about reading.

Matching Reading with Writing, I found an annual average of 30 columns of articles devoted to Reading as against 7 columns devoted to English Composition. Almost all articles appeared to be about high school and upper grade school writing. Very few articles dealt with the primary grades. I found none that dealt with first grade. I could locate no more than 4 articles on primary grade composition reported in 25 years.

The third edition of the *Encyclopedia of Educational Research* reports research published between 1950 and 1960. It runs 80 columns on reading with 422 source references.

Neither writing nor composition is mentioned in the Encyclopedia's table of contents. Its index makes this reference: "Written Composition:teaching of, 460-61." The article runs in 2 columns and has 27 reference notes. But the authors say their article describes written composition in high school. There is no reference to elementary school research in composition.

More than 5 columns are given to "hygiene of reading" which is about the color of paper best suited for reading. There are 5 columns on left-handedness and right-handedness. "Handwriting" requires 13 columns and 74 reference notes.

There are 15 columns on the school bus and its driver.

At Columbia Teachers College, I looked up the number of doctoral theses on writing compared with the number on reading. The first file box I could get included cards for the 1952-57 theses. There were no entries under "writing" or "composition." The theses on writing appeared under the heading of "English teaching." I counted 39 theses on reading and 4 on writing. One of the 4 on writing was about high schools, another was about the writing problems of Puerto Rican children. There were 2 theses on elementary writing. One was titled "What Is Creative Writing?" The other was "Basic Issues & Concepts in Teaching Creative Writing."

Which is more important -- reading or writing?

In the order of time, taken as events in a child's early growth, seeing and hearing come before any conscious attempt to make directed sounds or gestures. A three months old infant will watch his mother's mouth while she's talking and will try to imitate her. In the sense that listening and watching come before a child's speech, so will reading come before writing. Reading, in the broad meaning of observing and acquiring, of receiving impressions, precedes expression.

But does this natural precedence in time argue sovereignty in teaching? I don't think it does. The infant 'reads' his mother's face to imitate her speech. We read to act. There is very little reading that we do purely for our own hermetically isolated knowledge or pleasure. After we have read, even while we are reading, we sometimes consciously sometimes unconsciously begin to translate what we have read into action. We make a note to remember something in order to tell somebody else. We make an unworded decision to alter a segment of our behavior.

We teach reading not as a dead-stop end in itself. We teach reading because of what we expect children to do with what they have read.

The measure of growth and development is not what a person reads, but what he does with what he has read. Reading instruction without a matched system of writing instruction perverts education.

There is no profession, no business, no government office, no industry, no service, no science, no art in the United States in which communication is not expensively, frustratingly clogged by bad writing. Yet, we continue to work for a system which hands up our children to higher schooling, to business and to the professions badly equipped to meet their most demanding need: the need to express themselves, the need to compose their thoughts, define their feelings and communicate with others on paper.

The National Science Foundation defines research as "a seeking for knowledge and understanding for the direct or indirect benefit of all." There is some argument whether research should be pure or practical. There is no argument that the results of research should be reported for the benefit of all.

The concept of research doesn't necessarily include either report or proposal. The individual who conducts research for himself alone obviously doesn't have to draft a proposition proving his plan is worth attention or money. If he doesn't have to account for time or expenses, he doesn't have to write a report either.

But if a person wants help, he has to be able to ask for it. If he wants an organization's help, whether that organization is a private foundation, industry or the government, he must be able to write a proposal and a report. He will have to write in clear, cogent English or he won't get what he wants. How many amendments, petitions and bond issues fail to be voted in or out because voters confronted with them in the poll booths can't make out what they mean?

So far as the backers of a research project are concerned, the report is what counts. Once a project is off the ground, it is the report we wait for. The report *is* the knowledge and understanding which is the product of research. Its the research *and* report which contribute to organizational and professional and industrial and social growth. Not merely research alone.

The researchist who fails to write a clear, useable report fails the organization which supported him. He fails himself, too, for the researcher's growth stops if he's stuck with his discovery and can't describe it to anyone.

What he's discovered must be known, must be used. It must be talked and written, but it must be received somewhere too, understood by someone other than himself. The speaker is completed in the listener, the writer in the reader.

Writing lets man extend the rims of his environment and address himself to new and distant persons, distant both in time and place. The writer grows not only by thinking his ideas through but in being read by others. He grows in acquiring and grows in being acquired. He grows by reading and grows by being read. He *becomes more* as he helps others *become*.

Our whole organization ball is stuck together by written communication: contracts, promises, directives, memos, sales presentations, instructions for handling and using, progress reports, agreements, proposals for change, bulletins and abstracts.

As organizations get bigger, move faster, reach out over greater distances, deal with far off nations, engage more people, merge and interlock with other companies, they need to devise swifter, surer, more accurate means of communication. But no matter how sophisticated our communicating media becomes, we continue to have two bottlenecks: the man who writes the message and the man who must read it.

Our theory of education holds us to training the man who must read. The man who must write the message is not truly taught at all. We continue to train catchers, though it's pitchers we need.

A badly organized report doesn't get better with speed. Bouncing it off Telstar won't jolt it into shape. We will improve writing by improving the writer, not by improving the machine he uses, not by improving the reader. An improved machine will only deliver the same bad writing faster or cheaper or louder or cheaper. The Laser beam has neither morals nor taste. It will send a lie if someone lies into it. It will send junk language if the sender can't write.

Reports are shipped in and out of organizations as boxes of junk, unassembled English with parts missing, chapters of odd and mismatched sentences like the misfit gauges, calibres in a military surplus store.

Meanwhile, the growth of our nation is blocked by the inability of our people to describe original thinking or to present plans for new development or to report research in clear, usable English. The end penalty of bad writing is either non-growth or mis-growth.

Bad writing steals learning from our children. Every month the U. S. Office of Education throws thousands of dollars towards the salvage of reading illiterates. Has the O.E.O. ever tried to save reading illiterates by reducing the number of writing illiterates? I don't refer only to the children here. I particularly refer to the writing illiterates who write and publish teachers' manuals and classroom textbooks.

It is presumed that composition is taught as a part of "English". But once writing becomes part of "English" it gets lost. English, in fact, becomes literature, in another word, reading. The English teacher is too busy teaching students how to read other writers of the past to help the writers of tomorrow.

Writing gets lost, too, when it is dropped into "language arts". The language arts are speaking, listening, reading and writing. But when you examine the curriculum, the textbooks and the course guides you will discover that what is called writing instruction is really only the reverse and seamy side of reading instruction.

Why does our educational system place such a heavy emphasis on reading while neglecting writing? Why are reading and writing split apart when they belong together?

In its preoccupation with reading, the educational establishment merely repeats what it has learned from our culture. The production of the first books using movable type signalled the end of the oral culture. The book itself automated the storyteller out of our lives.

We are now seized by electronics. The tape-recorder and television and radio doesn't extend everyone's central nervous system, only the communicator's. Electronics will continue the rape started by books. Children will not learn to communicate to a machine any more than they learned to communicate *to* a book. Just as the book once sacked our storyteller, television discussions are taking away family conversation.

Three forces set up the barriers which prevent the development of a proper communication curriculum.

1. The first force is the Ph.D. of English system, a reading oriented system. The English professor is preoccupied with writers of yesterday. Though the Chaucer professor knows he must advance his own career by writing, he is not rewarded professionally for training writers. Doctoral candidates who teach Composition I realize the time they spend with students' papers is time taken away from papers which they themselves must write for their own professional advancement. In only one or two places in the U.S., the University of Nebraska, for example, has an English department put its experience, knowledge and prestige to work on beginning English in the primary grades. The vacuum this inattentiveness has created has allowed a second force to oppose writing.

2. The second block against writing instruction is the Reading Expert. Reading Experts have persuaded the government to believe that for every reader there is one less drop-out, one less criminal, one less unemployed person. They are so convinced reading is the only key to success that when someone doesn't succeed in life they say it is because he can't read.

The IRA is a healthy, active organization doing the job it has decided it should do. But what is good for the IRA is not necessarily good for education. Since there is no comparable lobby promoting speech or writing, the primary grades are sent on a swerving biased course.

Close behind the Reading Expert is the Reading Measurement Expert. Note this reading bias. We have an arsenal of reading tests and as many Reading Measurement Experts as the total number of Fuller Brush men and Avon ladies combined, yet we have no testers for measuring writing. The fact makes me doubt both the Experts, their tests and their results. I doubt their tests because I doubt that numbers can ever understand words. I doubt the testers because if they can't measure a child's written statement which is on paper, which they can feel with their fingers, hold up to the light and pass around among psychologists, speech experts, parents, administrators, taxpayers and teachers, how can I believe they are able to measure an event which happens in the invisible, untouchable human mind? I doubt the testers because they doubt each other. I have yet to meet a Measurement Expert in reading who has examined test results without first finding out who gave the test. I doubt the testers for one more reason. The only device they can trundle out to measure reading pleasure is the lie detector. Yet, if an entire i.t.a. class is asked to write about a favorite story and if almost all class members can re-tell on paper at least one story and explain why it is a favorite, one would think surely this would provide some gauge for pleasure. At the very least, doesn't it indicate a child can read? Yet the Measurement Expert ignores both these obvious means and puts his trust in the magic scales he buys from Harcourt-Brace & World. I may one day believe the Measurement Expert, but first he must turn his altar around to face the people and he must put his mumbo-jumbo jargon in the vernacular.

By creating the general impression that reading is the *king* subject, Reading Experts have persuaded teachers to feel that reading instruction is the one all-important study of their professional careers, and that they can never ever get enough information about it. In 1963, the National Council of Teachers of English asked elementary school teachers what school subjects they wanted to learn more about and which subjects they considered most professionally valuable. "The over-whelming national choice was reading," the Council reported in *The Continuing Education of Teachers of English*. In spite of the swamp of projects, institutes, seminars, and workshops all promoting reading, 79.1% of the teachers said they wanted still more.

3. The third force which blocks a proper curve of communication is the book publishers. I am not against business. I am against education letting business determine education. There's very little money elementary school book publishers can make by promoting writing. The only products they can sell are blank paper and pencil. Companies which can make a profit by promoting writing instruments are so affected by Reading fever that they try to sell their products as reading aids. Here at this conference, Smith-Corona has introduced its new i.t.a. typewriter. Pick up one of the brochures next to the machine. It's a beautiful example of reading bias. Its cover says boldly: "Breaking through the reading barrier with Smith-Corona."

Elementary schools buy almost 40% of the textbooks published: more than $2 billion worth each year. Very little school money goes for books teaching writing composition.

Ginn & Company's 1965-6 price list presents 156 *reading* items for sale to all elementary school grades. The total sale of this package would earn the company $433.44. The *spelling* package consists of 18 items costing a total of $22.98. But under the subject "English", Ginn offers only 14 items. Of the 14, 4 relate to literature (which is reading) and 4 relate to the classroom library (also reading). Of the remaining 6 items, one is "My Picture Dictionary" and one is a set of alphabet wall cards. Two books teach correct language usage and two, finally, concern writing. The two writing books are for the 7th and 8th grade. They sell for $1.70 and $1.95.

Scott, Foresman's total reading package sells for $368.82. The Basic Reading Program lists 61 items for $82.78. The company also sells plastic cubes imprinted with words. You can buy Rolling consonants for $3.30. Rolling Vowels cost more: $7.50. A Scott Foresman ad reads:

> Step up power in...writing...strengthen their awareness of sentence patterns, of the function of words in sentences and the significance of word order...
> ...there are noun blocks, verb blocks, adjective blocks, adverb blocks...Each time children toss the blocks they can build a grammatically correct sentence, following sentence patterns they are used to hearing...with 10 additional blocks children can now make thousands of sentences ranging in length from 3 to 7 words.

Scott, Foresman's list show books for writing under "Additional Materials". The first 6 items in this category are:

| | |
|---|---|
| Big Book for We Read Pictures | ($6.60) |
| Big Book for Before We Read | ($5.10) |
| Big Book for pre-primers | ($4.68) |
| Big Book Holder | ($9.00) |
| Comprehensive Card Set | ($16.50) |
| Speech Improvement Cards | ($4.95) |

There is also *My Little Pictionary, My Second Pictionary, Beginning Dictionary, Junior Dictionary* and *Advanced Junior Dictionary*. *Learn to Listen, Speak and Write* sells for 60¢ and *My Practice Pad* sells for 36¢. It comes in 6 parts. Total cost including teachers' editions: $13.92.

The six-year-old i.t.a. child is a totally different educand. He's a new subject, one we've never had before in school. The i.t.a. child becomes a different educand the moment he abstracts his own talk and puts it on paper. He is a different educand for two reasons:

1. He reveals more exactly and clearly what is educable in his personality; he reveals it himself; he reveals it verbally.

2. Because the i.t.a. child reveals himself in a direct, verbal way, he changes the teacher; his relationship with the teacher is different; he can experience interpersonal dialogue.

Before we can deal with this new educand properly, we will have to clear the curriculum and methodology of Rube Goldberg devices created to cope with T.O. distortions. We will have to re-set correction standards used by teachers in evaluating child writing. The standards currently imposed are based on limited T.O. achievement possibilities. We will also have to redefine the basic elements of communication instruction. The definitions currently used are related to T.O. conditions and are false and injurious when applied to i.t.a. writers.

The Initial Teaching Alphabet lets us put reading and writing back together where they belong. An ideal i.t.a. course would begin with children learning to read each other's writings. They would get no books, not till they've learned that writing is an extension of talk and that they must be clear to be understood.

The i.t.a. educand can be given a *writing oriented* curriculum and can be taken off the passive, reading oriented curriculum he now has. He can be given a curriculum which will meet his life's needs for writing. Those needs start in school since, obviously, life doesn't wait for graduation before it starts.

## 2. A COMPARISON BETWEEN THE ORAL AND WRITTEN RESPONSES OF FIRST-GRADE CHILDREN IN I.T.A. AND T.O. CLASSES (U.S.O.E. NO. 7-8220)

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In a number of recent research studies comparing the initial teaching alphabet to traditional orthography, it has been observed that the creative, or independent, writing of first-grade children appears to represent, with considerable accuracy, their oral language competency. Many of the co-operating teachers and research personnel observed a marked increase in the quantity of writing done by the first-grade children, as well as an increase in quality. These observations are not supported by any objective data. The primary purpose of this study is to compare the writing competency of students being taught to read in i.t.a. to the writing competency of children learning to read in traditional orthography; to determine whether the reports of improved composition are actual fact or are the result of enthusiasm for a relatively new and novel approach to the teaching of reading.

Research personnel have reported that children instructed in the i.t.a. medium are better able to translate their thoughts as expressed in speech to a fairly similar form in writing because of the sound regularities that exist in i.t.a.; whereas in T.O., children are unable to translate their speech and thoughts because of problems in spelling resulting from inconsistencies and irregularities of traditional orthography. This pilot study is an attempt to evaluate these observations.

### RELATED RESEARCH

Teachers participating in the Beginning Reading Study (Tanyzer, Alpert and Sandel 1965) sponsored by the New York State Education Department, report that their i.t.a. classes were capable of "considerably more in creative writing" than were the T.O. classes they had taught in previous years.

The results of the questionnaires submitted to second-grade teachers in the second year of the Beginning Reading Study (1966) suggest that "the writing ability of children, in terms of independently being able to say what they want to -- seems to be somewhat better when children are instructed in i.t.a. than when they are instructed in the irregular T.O. medium." According to the i.t.a. Foundation Report (1966), one of the most frequent comments of teachers of i.t.a. taught children is that they "write more, with a more advanced vocabulary, with language more like the child's spoken language, and with greater independence of the teacher than do children whom they have previously taught with T.O." Rebecca M. Stewart (1965) of the Bethlehem area school system, observes that the compositions of i.t.a. taught children contain complete, correctly punctuated sentences and a "tremendous" range of vocabulary.

A report of the study in Lampoc, California, states...."On a subjective basis, the i.t.a. stories were definitely more comprehensive, flowed more easily, and included more complex thought processes as well as more colorful wording and phrases." From Newburgh, New York, the following is reported...."Creative writing was cited as one of the most satisfying results of the i.t.a. program in that children are able to express themselves without hesitation in written work and are able to use vocabulary far above that of the T.O. children," i.t.a. Bulletin (1967).

Relevant studies relating to written composition in the primary grades include Oftedal's (1948) study of "picture writing" with twenty-five third-grade children in which two picture written stories and two handwritten stories of each of the thirteen pupils were analyzed for elements of expression. This study verified her belief that writing tends to inhibit the thought of young children. Strickland (1950) states that dictation appears to call for more precise and organized thinking than is required in spontaneous storytelling; and Loban (1963), in his longitudinal study, collected and analyzed language used by the same children through their kindergarten and first six years of elementary school. The summary of Loban's findings included the inter-relations among language arts, but the oral language and written language studies were conducted in the upper elementary grades. The first- and second-grades were not studied for competency in writing, since independent writing activities were not conducted at that level.

Burrows (1966) refers to the first-grade writing experiences of the "telling-dictating-helping-copying" procedure. She describes the impasse of the transition from dictating and copying to independent writing and states, "In order to preserve the all-important independent idea, the teacher writes the final portion from dictation."

## PROCEDURES

### A. Population of the sample

Two first-grade classes, one i.t.a. and one T.O., were randomly selected from a school in each of four school districts which are continuing participating in the current project, "Beginning Reading -- The Effectiveness of i.t.a. and T.O." -- No. A-75-64. .

The total sample consists of approximately 100 children in i.t.a. classes and 100 children in T.O. classes. The classes are grouped heterogeneously following school procedures. The districts are similar, based on characteristics determined for the continuing comprehensive study. The experimental and control groups are equated on the basis of teacher-competency and heterogeneous grouping as determined by the school principal.

### B. Data and Instrumentation

The Pintner-Cunningham Primary Test, Form A was administered to determine the intelligence rating for each subject. The data gathered included one oral response and one written response for each pupil in the study for each of three stimuli. The oral stimuli were administered by a research assistant on a one-to-one basis with the pupil and the response was recorded on tape. Each writing stimulus was administered as a whole class activity. The written samples were gathered on three consecutive school days. Half of the children received the stimulus and responded in writing first then, later, were asked to make an oral response to the same stimulus. In the other half of the sample the oral response preceded the written response. Three stimuli were used in order to provide maximum opportunity for the youngster to react and respond on the basis of his experience and ability. The stimuli were designed to elicit (1) the child's description of a given object; "How would you describe or tell about a car to a friend who never saw one?"; (2) the child's relating of a given experience: "Tell me about a game you like to play."; (3) the child's description of an emotional reaction to a given experience: "The first day you went to school was a special day. Can you tell me how you felt that day?" All the questions were introduced with readiness discussion and were consistent since they were administered to the total sample by the research assistant assigned to the project.

## C. Statistical Design

A total of three samples for each measure, in oral and in written responses, was recorded. For the three oral responses and three written responses of each child, the following data was tabulated: (1) the number of running words, (2) the number of different words and (3) the number of thought units.

An analysis of variance was computed utilizing the number of running words, the number of different words and the number of thought units as the dependent variables. The independent variable was intelligence, with the total group (i.t.a. and T.O. groups) divided into three groups intellectually on the basis of the Pintner-Cunningham Primary Test. The statistical comparisons for each of the three dependent variables were determined for each of the three categories of intelligence.

An analysis of variance was also used to determine the variability between and within the treatment groups for each criteria (number of running words, number of different words, number of thought units). In this study, a thought unit is defined as a simple sentence or its equivalent. The component clauses of a compound sentence are considered separate thought units. The independent variable in the second analysis was the oral response of the child to the three stimuli in terms of the number of running words, variety of language utilized and number of thought units. For each of these three variables, the total sample (i.t.a. and T.O.) was divided into three groups -- high, average and low -- for each of the three measures of oral response. The written responses of those high in each of the three variables of oral language response was statistically compared with a similar procedure utilized for those average and low in oral response. The design appears as follows:

ANALYSIS OF VARIANCE DESIGN

| | | | Intelligence | | |
|---|---|---|---|---|---|
| | | | Low | Average | High |
| Oral Responses and Written Responses to Stimuli | i.t.a. | 1. No. of Running Words | | | |
| | | 2. No. of Different Words | | | |
| | | 3. No. of Separate Thought Units | | | |
| | T.O. | 1. No. of Running Words | | | |
| | | 2. No. of Different Words | | | |
| | | 3. No. of Separate Thought Units | | | |
| | | | Oral Responses | | |
| | | | Low | Average | High |
| Written Responses to Stimuli | i.t.a. | 1. No. of Running Words | | | |
| | | 2. No. of Different Words | | | |
| | | 3. No. of Separate Thought Units | | | |
| | T.O. | 1. No. of Running Words | | | |
| | | 2. No. of Different Words | | | |
| | | 3. No. of Separate Thought Units | | | |

The initial purpose of this pilot study was to determine whether a comparison of the written language of first-grade children learning to read and write with i.t.a. would result in (1) an increased quantity of writing, (2) a greater variety in the vocabulary employed in the composition and (3) an increased number of separate thought units. In addition, measures of the oral language of first-grade children learning to read and write with i.t.a. and T.O. were also evaluated for each of the three dependent variables by category of intelligence. It was expected that the oral language of first-grade children would not be affected to any great extent by the medium in which the child was being instructed in reading. Hence, the oral responses of the child served as a control. It was hypothesized that the written language of children instructed in i.t.a. would not be statistically different from the written language of children being instructed in traditional orthography, and that the oral language of the two experimental groups would also be similar in the three dependent variables.

## ANALYSIS OF THE DATA

Table 1 illustrates the results of an analysis of variance utilizing the three criteria as dependent variables with intelligence as the independent variable.

TABLE 1

SIGNIFICANCE OF THE DIFFERENCE WITHIN THE MEAN SCORES OF ORAL AND WRITTEN LANGUAGE SAMPLES OF LOW, AVERAGE AND HIGH I.Q. i.t.a. AND T.O. GROUPS FOR THE THREE VARIABLES: NUMBER OF RUNNING WORDS (VAR. 1), NUMBER OF DIFFERENT WORDS (VAR. 2), NUMBER OF THOUGHT UNITS (VAR. 3)

| | I.Q.: | Low | | Average | | High | | F |
|---|---|---|---|---|---|---|---|---|
| | | i.t.a. N=31 | T.O. N=37 | i.t.a. N=29 | T.O. N=34 | i.t.a. N=36 | T.O. N=30 | |
| Var. 1 | Oral | 176.29 | 150.59 | 228.37 | 152.79 | 185.97 | 192.40 | 2.76 |
| | Written | 87.64 | 34.05 | 114.58 | 48.76 | 122.83 | 57.70 | 99.18** |
| Var. 2 | Oral | 93.12 | 78.94 | 113.89 | 86.44 | 97.27 | 96.00 | 3.99* |
| | Written | 54.12 | 22.54 | 69.34 | 31.55 | 73.58 | 37.26 | 108.34** |
| Var. 3 | Oral | 25.00 | 20.94 | 33.03 | 24.20 | 27.25 | 26.33 | 4.76* |
| | Written | 14.35 | 4.97 | 17.65 | 8.23 | 19.61 | 9.26 | 108.71** |

* Significant beyond .05 level of confidence
** Significant beyond .01 level of confidence

There is no significant difference between the number of running words in the oral responses of the i.t.a. and T.O. groups in all categories of intelligence. There is a significant difference, however, in both the number of different words and the number of thought units in the oral responses of i.t.a. and T.O. groups in the low and average I.Q. categories. Since the difference is in favor of the i.t.a. group, this suggests that the quality of language of youngsters of low and average intelligence may be affected by the medium of instruction. There appears to be no significant difference in the oral language between the groups within the high I.Q. category. The second analysis of variance reported later was computed with the oral language used as a control to provide for this occurrence. Table 1 indicates also that there is a significant difference between the written language responses of the i.t.a. and T.O. groups within and between the high, average and low I.Q. categories for each of the three criteria.

The results of the comparison of the oral and written responses for the three criteria can be seen in Table 2.

TABLE 2

SIGNIFICANCE OF THE DIFFERENCE BETWEEN THE MEAN SCORES OF ORAL AND WRITTEN LANGUAGE SAMPLES OF LOW, AVERAGE AND HIGH I.Q. i.t.a. AND T.O. GROUPS FOR THE THREE VARIABLES: NUMBER OF RUNNING WORDS (VAR. 1), NUMBER OF DIFFERENT WORDS (VAR. 2), NUMBER OF THOUGHT UNITS (VAR. 3)

| | I.Q.: | Low | | | Average | | | High | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | Oral | Written | N | Oral | Written | N | Oral | Written | F |
| Var.1 | i.t.a. | 31 | 176.29 | 87.64 | 29 | 228.37 | 114.58 | 36 | 185.97 | 122.83 | 32.53** |
| | T.O. | 37 | 150.59 | 34.05 | 34 | 152.79 | 48.76 | 30 | 192.40 | 57.70 | 86.23** |
| Var.2 | i.t.a. | | 93.12 | 54.12 | | 113.89 | 69.34 | | 97.27 | 73.58 | 35.54** |
| | T.O. | | 78.94 | 22.54 | | 86.44 | 31.55 | | 96.00 | 37.26 | 118.23** |
| Var.3 | i.t.a. | | 25.00 | 14.35 | | 33.03 | 17.65 | | 27.25 | 19.6[illegible] | 38.72** |
| | T.O. | | 20.94 | 4.97 | | 24.20 | 8.23 | | 26.33 | 9.26 | 126.42** |

* Significant beyond .01 level of confidence

In both i.t.a. and T.O. groups, in all I.Q. categories, there is a significant difference between the oral and written responses. There appears to be a greater significance between the oral and written responses of the T.O. groups in all categories. This would suggest that the written responses of the i.t.a. groups more nearly represent the oral language competency in the respective I.Q. categories. A significant difference can also be seen between the low, average and high I.Q. categories within both i.t.a. and T.O. groups.

The written responses of i.t.a. and T.O. groups were compared for all criteria with the oral language as the independent variable. The total sample of oral language responses for each measure was divided into low, average, and high categories. The results of this analysis of variance can be seen in Table 3.

TABLE 3

SIGNIFICANCE OF THE DIFFERENCE BETWEEN THE MEAN SCORES OF THE THREE VARIABLES FOR i.t.a. AND T.O. WRITTEN LANGUAGE SAMPLES OF LOW, AVERAGE AND HIGH ORAL LANGUAGE COMPETENCY

| Oral | Running Words | | | F | Different Words | | | F | Thought Units | | | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Language | Low | Average | High | | Low | Average | High | | Low | Average | High | |
| N | 28 | 33 | 35 | | 24 | 36 | 36 | | 24 | 30 | 42 | |
| Written i.t.a. | 98.50 | 100.24 | 125.60 | 95.21** | 62.04 | 61.11 | 73.58 | 100.09** | 15.91 | 16.93 | 18.40 | 97.52** |
| Written T.O. | 38.26 | 45.64 | 56.65 | | 24.68 | 30.70 | 36.40 | | 6.28 | 6.35 | 9.89 | |

** Significant beyond .01 level of confidence

The difference between the written responses of the i.t.a. and T.O. groups is significant for each measure, favoring the i.t.a. groups. There also appears to be a significant difference between the i.t.a. and T.O. written responses within each measure and between the high, average and low categories of all written language competency. In both analyses, using the measures given, the i.t.a. classes indicate a greater use of words, more variety in the use of words, and a greater number of thought units, when the oral and written language samples are compared between and within the i.t.a. and T.O. groups.

Word Frequency

The total number of samples included 288 samples from i.t.a. classes and 300 samples from T.O. classes. A total number of 913 words were tabulated from the 588 writing samples. Of the 913 words, 102 words were represented in T.O. writing only; 499 words were represented in i.t.a. writing only; 312 words were represented in both i.t.a. and T.O. writing samples. Of the 312 words, it was noted that 33 words were represented more frequently in the T.O. samples than in i.t.a. samples. In the remaining 279 words the frequency was higher in the i.t.a. samples -- or equal to the T.O. samples. Of the 499 words which were represented in the i.t.a. samples alone, the range and variability of vocabulary suggests further studies relating to the speaking, listening and writing ability of these youngsters. It is also interesting to note that of the 33 words which were represented more often in the T.O. samples than in the i.t.a. samples, a large percentage (of these words) constitutes the sight word vocabulary familiar to the first-grade curriculum. An examination of the spelling variations in the written samples of the i.t.a. and T.O. groups was made. Three categories were considered for this analysis: (1) representation of infantile speech, (2) representation of mispronunciation, (3) representation of spelling consistent with phonemic associations but incorrect in either i.t.a. or T.O. forms. Some examples in each category appear significant. Infantile speech was recorded more frequently in the i.t.a. samples than in the T.O. samples, and in words either absent from or infrequent in the written vocabulary of the T.O. children. Such words as *bafroom* (bathroom), *froe* (throw), *mouf* (mouth), and *wif* (with) indicate a confusion between *f* and *th* sounds. The word *faebit* (favorite) indicates the confusion of *b* and *v*. In the words *chræn* (train) and *chrap* (trap), the *ch* sound is given for *t*. Both i.t.a. and T.O. samples indicated *haf* representing the word *have*.

In the second category of mispronunciation, the following appears significant:

Such words as *haftur* and *hafta* (have to), *shœdus* (showed us), *drievit* (drive it), *ficsit* (fix it), represent two words which the youngsters obviously hear as one. Both i.t.a. and T.O. samples evidenced a *d* for *t* in the word *motor* (either mo*der*, mo*dor* or even *m d r*). The word *garbage* was represented as *gobich*, *battery* as *badry*, *driving wheel* as *jieveenweel*. These mispronunciations seem to indicate that through listening to inaccurate or inarticulate speech the children reproduce the inaccuracies in their own oral and written expression.

For the category representing phonemic spelling, which appears to be consistent with both speech patterns and the child's experience with sound-letter association, the following words are interesting examples:

From the i.t.a. samples:

*Spriezt* (surprised), *srtnntlee* (certainly), *frnechr* (furniture), *wrc* (work), *puzishin* (position), *rithmotic* (arithmetic), *srkl* (circle), *difrint* (different), *lirnd* (learned), *yuzd* (used).

For the T.O. samples:

*Peepul* (people), *liec* (like), *rid* (ride), *gos* (goes), *wht* (what), *frst* (first), *playsis* (places), *yousful* (useful), *modrsikl* (motorcycle). The examples of T.O. spelling in this category indicate that the children seek some representative means of expressing oral vocabulary in written form. They appear to use familiar associations in writing *un*familiar words: you, play, ie and i for long i sound.

## SUMMARY AND CONCLUSION

The results of this pilot study suggest the following:

1. The written language of children instructed in i.t.a. is statistically different from the written language of children being instructed in traditional orthography when compared with each of three measures or criteria: (1) number of running words, (2) number of different words, (3) number of thought units.

2. The written language of children instructed in i.t.a. when compared with children instructed in T.O., resulted in (1) an increased quantity of writing, (2) a greater variety of vocabulary employed in the composition and (3) an increased number of thought units when evaluated by category of intelligence.

3. The written language of children instructed in i.t.a., when compared with children instructed in T.O., resulted in (1) an increased quantity of writing, (2) a greater variety of vocabulary employed in the composition and (3) an increased number of thought units when evaluated by category of oral language competency.

4. This comparison of the oral and written language appears to provide an approach to the evaluation of the written expression of primary grade children who are learning to read and write with i.t.a., thereby supporting observations by objective data.

5. The lesser degree of difference between the oral and written responses of children learning to read and write with i.t.a. when compared with children learning to read and write with T.O., suggests a greater compatibility between their thoughts as expressed in speech and, in translation, expressed in writing.

Implications for further study:

1. The results of this study suggests that a broader sample be evaluated to include such discriminating factors as classroom procedure, instructional materials and correlation with related language arts activities.

2. The longitudinal effect of the medium of instruction on the written language competency of the first-grade children in the pilot study may be determined when they proceed to second-grade.

3. Plans for teacher-guidance may be prepared and evaluated suggesting programs and procedures to maintain compatibility between the oral and written language competencies of the i.t.a. groups.

4. This pilot study may be replicated with an in-service language development program for teachers to be introduced as an independent variable in the design.

5. The effectiveness of an integrated speech program in first-grade may be evaluated through the writing of children being instructed in i.t.a. to determine whether less confusion of sounds appears in writing.

6. The relationship among instructional reading level, standardized reading test scores, oral language responses, and written responses should be studied.

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## 3. SOME LINGUISTIC PROBLEMS IN USING THE INITIAL TEACHING ALPHABET

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The use of the Initial Teaching Alphabet in reading has helped reveal for many teachers certain characteristics of English which might not have been plain to them before. The fact that i.t.a. centers around the phoneme and proceeds to the grapheme, instead of the other way around, makes the teacher much more observant of speech sounds than when using methods that begin with the alphabet and proceed to phonemes, or methods that begin with English words and proceed to orthographic analysis.

But since i.t.a. is such a different approach to language instruction it also entails different problems. The linguistic problems which may occur when using i.t.a. can be divided as to whether they are problems in phonics learning, reading, or writing. The first are probably the most important because the latter two types are likely to be temporary. Yet they can all be troublesome if they are not anticipated.

To consider first those problems which may arise in phonics, let us begin with the issue of the correct pronunciation of English phonemes. The word "correct" is ambiguous here; I use it in the sense of "the best choice," because English phonemes differ slightly depending upon their environment in the word, and there is no clear agreement on which of several pronunciations is "correct." However, it is of no help to a child to begin his instruction by telling him that sounds within words are unstable, and that while we are saying one sound we are actually beginning the articulation of another. What *is* a help is to be able to say, "This is the symbol for the sound *a* as in *apple*."

Some teachers prefer to avoid isolating sounds and say instead, "This is the symbol for the sound you hear at the beginning of *apple*." Such a statement is not nearly as helpful as the former one, especially at the initial stages of instruction. I have heard children respond by isolating the first sound in the word *apple* as *ap*. Therefore I recommend helping children isolate sounds, although linguists do not generally favor this process. The main reason they disapprove is that isolation of a sound distorts it. However, even this distortion is an assistance to the child at the initial stages of learning, if it is not too great a distortion. Therefore the teacher must make a careful choice when isolating sounds.

First, she must know the difference between voiced and unvoiced sounds. For example, she should pronounce the *t* and *s* sounds without voicing. One of the most helpful activities in explaining unvoiced sounds to children is to have them place one hand on the throat, at the voice box, and feel the vibration that results when pronouncing a voiced phoneme like *ee* and the lack of vibration when pronouncing an unvoiced phoneme like *t*.

Next, she must try not to add a vowel sound to the consonants. For example, the sound of *n* is, I believe, best pronounced not *un* or *nu* but *nnn*. I have watched children who had been taught to say *nu* struggle to analyze a word with an *n* in it -- a word like *Nan*, for instance. These children end up with a series of sounds like *nu-a-nu*, and are then stranded until the teacher comes to the rescue.

The problem of keeping a vowel sound off the end of *b* and *d* is much more difficult, probably impossible. But an attempt must be made. The pronunciation secret is to open your mouth so little, as you complete the sound *b* or *d*, that you hardly open it at all. This trick eliminates a great deal of the *uh* sound and is therefore helpful to children in blending.

A very important aspect of the oral instruction with i.t.a. is this very activity of blending. If the teacher is using a synthetic method, but does not begin emphasis on blending as soon as two symbols are taught, a serious instructional problem can develop. I have seen children taught one symbol at a time for several weeks, after which the teacher suddenly begins to wonder why the children cannot read. The answer is that they have not been taught to blend the sounds together. Saying them separately is quite different from knowing how to mesh them together. There are many classroom activities that can be engaged in that give daily practice in synthesizing sounds into words, and it is daily practice which I believe is needed, probably for a couple of months for the average learner.

Now to turn to one problem that may arise in reading; the problem of allophones. For our purposes here, an allophone may be considered as a slight variation in an English phoneme, one which does not change the meaning of the word. The example which is often given is the three different forms of the sound of the letter *p* in the words *pit*, *spit*, and *sip*. In the first word, the *p* is aspirated, in the second it is only partly-released, and in the last it may not be released at all. In i.t.a., of course, the 44 symbols make no allowance for allophones. This is doubtless more of an advantage than a disadvantage, for representing them all would make for an unwieldy system. But the tendency of a teacher who is not aware of allophones is not to recognize the incorrect pronunciations which may result from the use of the wrong allophone.

For example: children are generally taught the aspirated form of the sound of the letter *t*, because it is the most distinctive. But if the word a child is analyzing contains the unaspirated form, as in *written*, or the partly-released form as in *pretty*, the child is almost certain to give the *t* the aspiration he has been taught, thus ending up with a pronunciation which is not really idiomatic American English. Teachers often accept this stilted pronuncation in the belief that it is somehow "more correct," and therefore the child is likely to accept it, too.

For this reason I believe some attention should be given to allophones in teachers' manuals, so that when these unidiomatic pronunciations occur, teachers will recognize them and can explain that we do have slight differences in some of our sounds depending upon which word they are in.

The other examples I wish to discuss all come under the heading of writing. One of the most curious developments in writing is the occurrence of a problem relating to what linguists call juncture -- the slight pauses or stops after words or sentences. This problem may arise as soon as a student begins to transcribe his own ideas. His discovery that it is possible to record his own ideas is an exciting one, and he may plunge headlong into what he conceives to be an exact transcription of his own speech. Something like the following, which was written by a New York State pupil, might result:

iewentωthecasclgæmfɑrmwithmiefɑthr

Obviously, this child has not perceived juncture at all. The phenomenon is evidently caused by the circumstance that, when the child wants to pick out, mentally, the symbols corresponding to the sounds in his sentence, he slows down his mental pronunciation so as to better identify those sounds; in the process of slowing down the pronunciation, he loses the juncture entirely.

Of course, linguists tell us that speech is actually a continuous flow, and that we as adult speakers of English perceive words within this flow only because we are used to considering speech as made up of words. Teaching with i.t.a. shows us that children may not immediately perceive speech as a series of words but may instead perceive it as a continuum.

In my experience, children who do not begin to write until later in the school year are less likely to develop this problem, probably because they have had more months of sight exposure to printed words with spaces between them.

Now compare the child's transcription, above, with the transcription which would result if written in "orthodox" i.t.a.:

ie went tω the catskill gæm fɑrm with mie fɑther.

Note the child's elimination of some sounds, for example from the word "Catskill". Those are sounds he did not hear. Also compare his phonemic transcription of "father" with the much more structural representation in "correct" i.t.a.; this is a problem which I will pick up again later. One of the most interesting differences is that the child evidently hears in his mind a correctly colloquial "wento" instead of the "went to" of our usual orthography; he realizes that only one *t* is heard in the phrase, although his juncture problem has kept him from showing that it is unreleased until it helps form the word "to." Juncture aside, the child's transcription is really closer to natural American speech than i.t.a. is.

The writing problem resolves itself into one that may simply require more emphasis on the truism that English is made up of words. Teachers often do not recognize the necessity of emphasizing this fact because they are so used to the word base of English that they are often unaware that languages may be built in quite a different way. To help emphasize the word base of English -- and incidentally to help teach other reading skills -- I propose the use of an audio-visual device, one which would give the learner the opportunity of "seeing speech" instantaneously, as it is spoken.

A primitive attempt to do just this may be recognized in the musical sing-along programs which were short features in some movie theaters in the thirties and forties. As a chorus sang the song, the audience was directed to "follow the bouncing ball," a white dot which described parabolas above the line of words, landing directly above a word precisely while it was being sung. With a little practice, the audience was able to read (and sing) the words at the pace directed by the "bouncing ball." A more sophisticated method used later was to have a word light up in a bright color just as it was being sung; in this way, color travelled along through the words themselves as they were sung, and the reader no longer had to deal with a separate item moving above them.

An electronic device already being used with deaf children is one which permits them to see the results of their own speech on a small screen in the form of thick and thin lines. Further, phoneticians in America, England and Japan who are interested in the mechanical aspects of auditory perception (acoustic phonetics) have long been experimenting with machines called speech recognizers, in which words are displayed on a screen as they are pronounced, and the inquiries I have made indicate that such machines are now approaching perfection. I can think of many classroom uses for a device.

In the meantime, it should be possible to synchronize a tape with a filmed sequence of printed words so that a child can hear individual words being pronounced as they are shown to him. As for special material particularly adaptable for such use, it is poetry which immediately springs to mind, possibly because it has a rather special form of juncture as well as the more usual forms.

The last linguistic problem I will mention, which also comes under the heading of writing, arises in the orthographic notation of certain phonemes. These differences also seem to arise only when the child begins transcribing his own ideas. One of these is the question of how to handle the phoneme which is represented in T.O. by the diagraph *wh*. There are children who seem never to use this phoneme themselves in common words such as "when," "where," and "what." They seem to have little difficulty in recognizing these three words when encountered in i.t.a.; it is when they begin to write that the ligatured symbol **wh** either disappears or suddenly becomes prolific.

A child who does not normally utilize this phoneme may either forget about it entirely when writing, or else he may assume that, whenever he hears the phoneme *w* in his mind, he really *should* be hearing the *wh*, and he may write every word that begins with *w* as though it began with *wh*. This is what one child wrote in attempting to be logical about the application of **wh** :

**the whrm whigld an whigld an when doun the whel.**

This problem can be complicated by the fact that one might also be dealing with an attempt to cultivate the *wh* sound artificially, well after the opposite habit has been established, as a form of snobbery, either at home or at school. Here I think we must give the class some experience with word lists comparing similar words containing the two different phonemes; for example, these:

| | | |
|---|---|---|
| **went** | **when** | |
| **whie** | **wiep** | **whiet** |
| **whot** | **wont** | |
| **whær** | **wær** | |

It may be helpful to add a simple explanation to the class -- that "for a long time" English people pronounced certain words as though they began with a sort of round-mouthed blowing sound (it was first spelled *hw*, by the way); that many people still pronounce the words that way; and that the student may or may not pronounce them that way himself. It is only after much experience with reading in i.t.a. during their first year of reading instruction that children can be expected to develop any proficiency in remembering which words are written in such fashion; but an attempt to insist upon a complete change in the child's own pronunciation is hardly supportable, and, I believe, unnecessary as well.

Other transcription problems can arise as the child becomes more and more interested in writing. The teacher should be prepared for the sort of ellipse shown above with the word "and", in which the child leaves off the last symbol. This type of error is less serious than that of substituting the wrong phoneme, and should be corrected only after grosser errors are corrected. Linguists point out to us that we should learn to discriminate between important and minor spelling errors; here is one place where we can do that.

Another ellipse which children make in their writing is to eliminate the phoneme that appears before *r* in many words such as *fur*, *bird*, and *father*. This is the *r* known as the controlling or syllabic *r*, which obscures the vowel and therefore acts like a vowel itself. Early in his first year of instruction, a child is not likely to be familiar with the fact that English syllables generally contain vowels. Even if he were, in these words the *r* is so heavily vocalized that he might consider it a vowel if he had not previously been taught our conventional English vowel classification. As it is, the child is very apt to use these transcriptions in his writing:

fr brd fathr

It is an easily-understandable omission. Linguists are not agreed on which phoneme we use with the *r* in these cases anyway, and it seems likely that different people use different phonemes. The main concern of the teacher should be that the lack of a written vowel obscures the structure of the words. I consider this to be a problem the teacher must try to deal with, perhaps not at first, and perhaps not if the child's composition contains only one example. But eventually, during the first year of instruction, groups of words in which the vowel is partly obscured by the controlling *r* should be listed and discussed. The point which is generally made during transition, about syllables containing vowels, might possibly be anticipated while the child is still in i.t.a., through a discussion of these words.

The last phenomenon of this type which I will mention is the child's recording of what we usually call our "long vowels," which are actually glides. Many teachers do not realize that our long vowels, *a*, *e*, *i*, *o*, and *u*, are actually glided from one vowel sound into another. In fact, they might be more closely recorded as:

aєє єєi ieєє œω yω
or or or
æєє єєy oєє

Children often transcribe our vowels in such ways, especially at first. Here again, the child has probably slowed down his mental pronunciation of the word he is writing, thus making the glided feature of the vowel more obvious. Teachers who have studied languages like Japanese, for example, are aware that other languages often have much purer and shorter vowel sounds than English. We think of our glides as being single vowels mainly because of our writing system.

I think we must take care that children do not get into the habit of writing our long vowels in this way. If such a transcription is allowed to become habitual, it might lead to a serious problem during transition. The earlier a child learns that our glides are conventionally considered one vowel sound, the better. However, I believe that the explanation is best made to individual students as the problem arises, unless this transcription appears to be on its way to being established as a class habit.

The problems of the child's transcription, it will be seen, are generally not the child's difficulties, but the teacher's. The child will go ahead and write down his ideas without fussing over details. It is the teacher who will see the pitfalls that may lie ahead and will be on the lookout for those which she may want to deal with before they become problems.

## D. ADMINISTRATIVE PROBLEMS

The introduction of any educational innovation into a school system and especially the launching of even a small-scale research project attempting to investigate the local effectiveness of i.t.a. is often accompanied by a number of administrative problems and considerations. The i.t.a. Foundation frequently receives inquiries from school systems asking how one begins an i.t.a. program. While it is clear that there is no "correct" formula that will be applicable for all school systems, some general guidelines can be given. Mazurkiewicz (1966) has presented a series of specific suggestions with regard to such considerations as budgeting, teacher training, and informing the public in the establishment of an i.t.a. program. The papers in this section present some additional suggestions.

Mr. Thomas Barresi presents an administrator's view and a case study of his school system with the step-by-step procedures for the consideration and adoption of i.t.a. he used. He also presents a number of specific exhibits of materials distributed to parents and/or teachers. The papers by Mr. William Callahan and Dr. Richard McCowan document a co-operative program between a state department of education, a regional school council, a local university and a series of local independent school systems. Dr. McCowan's paper includes general suggestions for the submission of proposals to state agencies.

### REFERENCE

Mazurkiewicz, A.J. How to begin i.t.a. classes. *i.t.a. Bulletin,* Initial Teaching Alphabet Publications Inc, Vol. 3, No. 3, Spring 1966.

## 1. AN APPROACH TO i.t.a. - A BEGINNING

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It will be my attempt herein to document for you a detailed, step-by-step account of the introduction to and final adoption of the Initial Teaching Alphabet in the Fredonia Central Schools, Fredonia, New York.

It could be said that in September of 1964 Fredonia was the first school system to use this medium in all, I repeat, all of its first grades without any control group, realizing, "What's to experiment with?" We were convinced of its potential and proceeded with confidence. I could enumerate the many times we have proudly looked back at this decision, but you people, most of you, anyway, know the merits involved with the i.t.a.

My purpose today is to share with you our step-by-step realization of this program, or, yes, any new program. Timing was so essential, as it is in any area of change, that it involves some pre-planning and projection. I hope to briefly cover:

1. Planning of introduction of i.t.a.
2. Follow-up (keep it in focus)
3. Staff meetings
4. Reports to Board of Education
5. Teacher visitations and in-service
6. News releases - parents' letters and press

## TOPIC: PRESENTING A NEW PROGRAM - I.T.A. (INITIAL TEACHING ALPHABET)*

Outline of Events - (Timing is crucial).

I. Initial Exposure to the New Program (1)
(See Teachers' Bulletin Feb. 14, 1964).

II. First Formal Discussion of the Program (2)
(See Teachers' Bulletin Mar. 10, 1964).

III. Detailed Discussions Using i.t.a. Materials (3)
(See Teachers' Bulletin Mar. 13, 1964).

IV. Preliminary Visitation Plans (4)
(See Teachers' Bulletin Apr. 3, 1964).

V. Visitation Schedule - Tues. and Wed., April 7 & 8, 1964 (5)
Kindergarten teachers and first grade teachers visitation to Shaker Heights and Cleveland, Ohio.

VI. Report of i.t.a. Trip to Rest of Staff (6)
(See Teachers' Bulletin Apr. 10, 1964).
Teachers recommend it be implemented in all 1st grade as of Sept. 1964

VII. Reading Consultant - Authorization of her attendance at i.t.a. Workshop, Lehigh University, and report to staff (7)
(See Teachers' Bulletin May 15, 1964).

VIII. All Kindergarten & First Grade teachers attend full week workshop (8)
(See Teachers' Bulletin June 1, 1964).

IX. Letter to All First Grade Parents - Sept. 1, 1964 (9)
(See sample.)

X. Parent Orientation (10)
(See Schedule for the Night, Sept. 28, 1964).

XI. Curriculum Report (11)
(See Vol. II, No. 3, Nov. 24, 1964.)

XII. Progress Report: Issues from June 1964, March 1965, June 1965 (12)

XIII. Compilation of the First Year Study with i.t.a. (13)

XIV. Periodic Reports to: Parents, Board of Education, Service Clubs,
Other Schools

* Initial and subsequent presentations were for the Board of Education. They were informed of the obvious merits of the program and approved approach to implementation.

( 1) Teachers' Bulletin, Feb. 14, 1964
"A film, 'Initial Teaching Alphabet - The Forty Sounds of English', will be shown for *all elementary* staff members on Thursday, March 5, 1964, in the Wheelock Cafeteria."

( 2) Teachers' Bulletin, Mar. 10, 1964
"There will be a meeting on Tuesday, March 17 in the Church Annex at 3.30 p.m. Please review the Winter edition of the i.t.a. Bulletin (Volume 1, #3) which is being routed to you."

( 3) Teachers' Bulletin, Mar. 13, 1964
"Primary teachers, minus Grade 3, are planning to meet in the Church Annex on Tuesday, March 17 to discuss the Initial Teaching Alphabet. All interested staff members are invited."

( 4) Teachers' Bulletin, April 3, 1964
"Plans are being made by Mr. Olson for a visit to the Cleveland area to observe the i.t.a. program in action. We will leave Fredonia at 6.00 p.m. on Tuesday, April 7 and return Wednesday evening."

( 5) Visitation Schedule, April 7 and 8, 1964

( 6) Teachers' Bulletin, April 10, 1964
"The i.t.a. Cleveland Report will be given on Monday, April 13 at 3.30 in the College Room of the Church Annex. K, 1st, 2nd grade teachers and all interested persons are requested to attend."

( 7) Teachers' Bulletin, May 15, 1964
"On Wednesday, May 20 at 3.30 p.m., Mrs. Hughes will report on her i.t.a. workshop experiences. All K-2 teachers please meet in the Educational Wing of the church. (Lowell Room)"

( 8) Teachers' Bulletin, June 1, 1964
"Monday, June 22, 1964 at 9.00 a.m. our Kindergarten, first and second grade teachers are planning to meet in Mrs. Hughes' room for the first formal i.t.a. workshop. Mrs. Hughes, Reading Consultant, will conduct the workshop. All others interested are certainly invited to attend."

( 9) Letter to All First Grade Parents, Sept. 1, 1964

(10) Parent Orientation, Sept. 28, 1964

(11) Curriculum Report, Nov. 24, 1964

(12) Progress Reports, June 1964, March 1965, June 1965

(13) Compilation of the First Year Study With i.t.a.

## EDUCATIONAL RESEARCH COUNCIL

## of Greater Cleveland

### VISITATION SCHEDULE

### EAST SIDE

| | | |
|---|---|---|
| Wed. Apr. 8, 1964<br>10.00 - 10.40 a.m. | Laurel School<br>1 Lyman Circle<br>Shaker Heights, Ohio | Phone 469-1441 |
| Lunch | At Stouffers' Restaurant,<br>or Clarks Restaurant at Shaker Square | |
| 1.30 - 2.30 p.m. | Mercer School<br>23325 Wimbleton Road<br>Shaker Heights, Ohio | Phone 921-1400 |
| 4.00 p.m. | Mrs. Tina Thoburn<br>Educational Research Council<br>Rockefeller Building, 4th floor<br>West 6th Street and Superior<br>Cleveland, Ohio | |

FREDONIA CENTRAL SCHOOL DISTRICT
FREDONIA ELEMENTARY SCHOOLS
FREDONIA, NEW YORK

September 1, 1964

Dear First Grade Parents:

The school bell will soon be ringing. Students in Kindergarten through Grade 8 will report for the first day of school on Thursday, September 10, 1964. All Kindergarten and first grade students will be attending the Eagle Street Foundation School. Incidentally, bus schedules and routes will be published in the Observer shortly before the opening of school.

This school year promises to be rewarding and exciting! All first grade students will learn to read using the Initial Teaching Alphabet (ITA). This special alphabet has been developed to lighten the burden of beginning readers. The alphabet has forty-four symbols instead of the conventional twenty-six. Each of the forty-four symbols represents one and only one sound. Once a child has associated the forty-four symbols with their respective sounds, any word written in ITA can be read by the child. This regularity of pattern makes learning to read a logical and joyful experience. The Initial Teaching Alphabet is an introductory teaching device and will be replaced by the traditional alphabet as soon as the children have successfully mastered the reading process.

When there is something new and possibly better in the educational world, we want to be aware of it. The Initial Teaching Alphabet has been used with great success in Great Britain for several years and, more recently, in several school districts in the United States. We have seen enthusiastic results in other public schools this past year, and want to discover what its merits are for us.

At first glance the Initial Teaching Alphabet may seem a little strange. However, the progress of the children will quickly illustrate the value of the program. If you wish to learn more about the use of the Initial Teaching Alphabet in Fredonia, why not plan to attend the special parent orientation meeting which will be held on Monday, September 28, at 7.45 p.m. in the Foundation School. We will show a film describing the ITA program and parents will have a chance to ask teachers about the program. If, in the meantime, questions arise please do not hesitate to contact your child's teacher or myself.

I am sure your child will enjoy an exciting and profitable year.

Sincerely,

Thomas L. Barresi,
Elementary Principal

To: All First Grade Teachers, Mrs. Hughes, Miss Trippe, Mr. Olson

From: Mr. Barresi

Subject: I.T.A. Parent Informational Meeting, Monday, Sept. 28, 1964

- Tentative Program -

| | |
|---|---|
| 7.45 - 8.00 | Welcome, Introduction of Staff - Mr. Barresi |
| 8.00 - 8.43 | Film - "Forty Sounds of English" |
| 8.45 - 9.00 | I.T.A. in relation to total Curriculum,<br>Why Fredonia is using I.T.A. - Mr. Olson |
| 9.00 - 9.15 | Results to date - Mrs. Hughes, Miss Trippe,<br>First Grade Teachers |
| 9.15 | Question and Answer Period |
| 9.30 | Closing Remarks - Mr. Barresi |

In order to review our approach to this important meeting, will you please meet on Monday, Sept. 28 at 3.30, Eagle St. - Foundation School

November 24, 1964

"He who will not try new remedies must expect new evils, for time is the greatest innovator" - Bacon

## I. T. A. REPORT

The inconsistencies and illogical patterns of the English language make learning to read an involved and complicated task for most children and, unfortunately, an impossible task for a few. We are using the Initial Teaching Alphabet in our first grades this year because we feel it lightens the burden of beginning readers and makes learning to read an easier and more profitable experience.

The first two and a half months in the Foundation School have been exciting and rewarding. Our teachers are enthusiastic and well pleased with the program but, more important, the first grade children are responding very well to the new medium.

Virtually all of the children who entered the first grade ready for reading have completed the readiness program. In a typical first grade using T.O. (Traditional Orthography*) it would be quite unusual if more than one fourth of the children were finished with the readiness program. Most of the children have learned at least fourteen symbol sounds. As a result, over half of them are already reading their first real books! Again, this would be quite unheard of in a typical first grade. The ability of the children to deal with terminal and medial sounds and blends of sounds is amazing. They are developing much more sophisticated vocabularies. Their word is no longer one of Dick, Jane and Spot as they look, look, look and run, run, run, but a world of space travel and pirate ships. Because they *can* read the children are much more enthusiastic about reading.

In short, there is clearly no question, that the learning-to-read process has been made much easier and more rewarding for our children.

A carefully controlled longitudinal testing program has been established to document the long range results of I.T.A. as our children move through the elementary school.

Visitors from school districts all over Western New York and Canada have observed the program. They have been most favorably impressed. Arrangements can be easily made** for members of our staff to visit this "revolution" in process.

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* (or regular alphabet)

** (through building principals)

# NEW READING PROGRAM

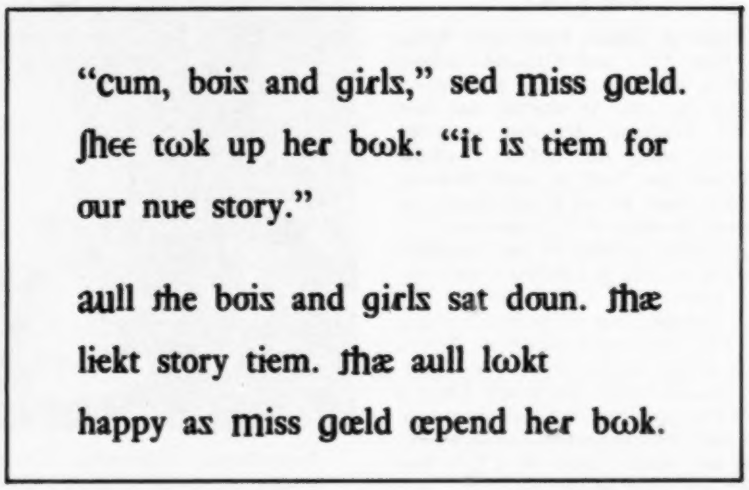
### The Purpose of the Foundation School

In the last issue of the PROGRESS REPORT, in an article dealing with our new school organization, it was stated that "The program of our Eagle Street Foundation School will be devoted to giving every child in the district the best possible start in school. All the teaching talent, experience and special services available will be directed to the program, especially the reading program." The key to a successful start in school for all children is, of course, reading. Once a child can read well, the door is open to other learning. If he can't read well, he finds locked doors for the rest of his life.

### English, A Difficult Language to Read

Unfortunately, for some children, English is a difficult and complex language to learn to read. For example, some letters have different sounds as "o" in bone, one, done and gone. Many of our words, although spelled the same, are pronounced differently as tear (to rip), tear (in crying). Simple sounds such as that represented by "i" can be spelled in many different ways, as *aisle*, he*igh*t, ch*oi*r, *eye*, or p*ie*. In fact, with our conventional alphabet over two thousand visual patterns are used for the forty-odd sounds of English. These inconsistencies and illogical patterns make learning to read an involved and complicated task. Many children experience a great deal of difficulty getting started. A few children never get started properly and have difficulty throughout their school lives.

A new, simplified teaching method called the Initial Teaching Alphabet (ITA) has been developed to lighten the burden of beginning readers. All first grade children in the Fredonia Central School District will learn to read using this new method next year.



"cum, bois and girls," sed miss gœld. ʃhee tωk up her bωk. "it is tiem for our nue story."

aull the bois and girls sat doun. thæ liekt story tiem. thæ aull lωkt happy as miss gœld œpend her bωk.

*A sample page from a first grade reader written in the Initial Teaching Alphabet.*

### The Initial Teaching Alphabet

The Initial Teaching Alphabet developed in Great Britain by Sir James Pitman, KBE, has forty-four symbols instead of the conventional twenty-six. Each of the forty-four symbols represents one and only one sound. Once a child has associated the forty-four symbols with their respective sounds, any word written in ITA can be read by the child. This regularity of pattern makes learning to read a logical and joyful experience. The Initial Teaching Alphabet is a special learning tool. It is not a phonetic alphabet. Children switch to the conventional alphabet (usually at the end of the first grade) without difficulty.

As mentioned above, the Initial Teaching Alphabet was inaugurated in Great Britain. Quite recently, Sir Edward Boyle, British Minister of Education called the Initial Teaching Alphabet "a remarkable success" and gave it official government endorsement. The Initial Teaching Alphabet is now being used quite successfully in schools throughout the United States. Fredonia will be among the first schools in Western New York to use the new method. Although formal evaluation of the Initial Teaching Alphabet will continue for many years, the evidence already available clearly indicates that on every test given to measure word recognition, speed of reading, accuracy, comprehension and reading level children who have learned to read with ITA scored significantly higher than children who have not. In fact, most children make the transition to third grade level material written in the conventional alphabet by the end of grade one. Although children using the Initial Teaching Alphabet read more books and at a higher level of difficulty *the main reason for using the initial teaching alphabet in Fredonia is to make the task of learning to read easier for our children.*

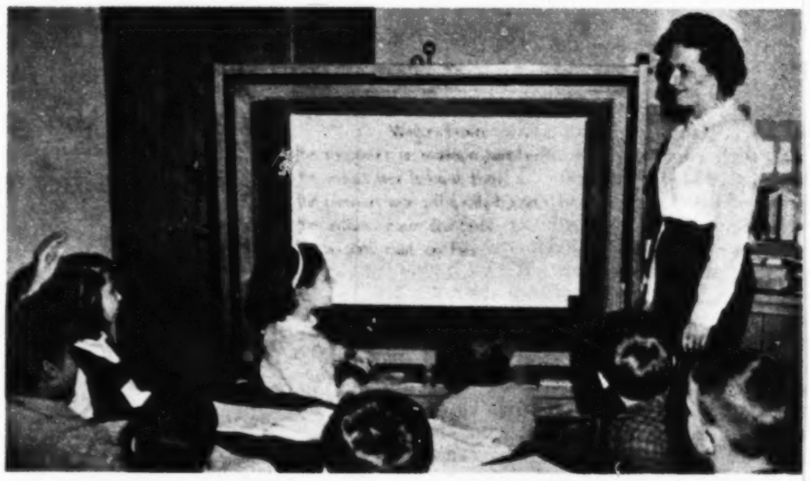
The Initial Teaching Alphabet has been carefully studied by our primary staff. Our teachers will receive special training in the use of the Initial Teaching Alphabet in a summer workshop to be conducted by our newly appointed reading consultant Mrs. Marion Hughes. Just as children seem to grasp our modern math program more readily than adults, children seem to grasp the Initial Teaching Alphabet more readily than adults. In fact, the new method may seem a little strange at first to adults who have been used to the conventional alphabet. Parents will be invited to a special orientation meeting in the fall and will be informed of developments during the course of the year.

The staff and administration of the Foundation School are quite excited about this new method because of what it can do for children. We feel that the use of the Initial Teaching Alphabet is one more illustration of "progress in our schools."

# I.T.A. AT MID-YEAR

### Why I.T.A.?

Dozens of visitors, from many Western New York and Canadian school districts, have visited our Foundation School this year to observe our new Initial Teaching Alphabet program. We are using the Initial Teaching Alphabet (see box) to make learning to read easier for all of our beginning readers. Because of the inconsistencies and illogical patterns of our language, learning to read is a difficult and complex process for many children. The new alphabet has forty-four symbols instead of the usual twenty-six letters. Each of the forty-four symbols represent one and only one sound. Once a child has associated the forty-four symbols with their respective sounds he can read any word written in I.T.A. and write any word he can say.



**First Grade is Exciting**—*The first grade children of Mrs. Frances Poland are able to write exciting stories with their new alphabet.*

### The Results

What have been the results? To date, the program has been very successful. The new alphabet *has* made learning to read an easier process for children. In any first grade there are, unfortunately, a few children who, because of their age or maturity, are not quite ready to read. By the middle of the current year all of our children who entered the first grade ready for reading have completed the formal reading "readiness" program. Virtually all of the children have mastered the symbol sounds and, as a result, are already reading their first real books. The children are reading books far in advance of their grade level. In fact, the children are moving so rapidly it is difficult to keep up with their progress. Over half the children are reading second grade level materials; a few are already reading third grade level materials. These results could not be expected in a typical first grade using the conventional alphabet. In fact, our children because they live in a good community and come from good homes will probably do better than children who are using the Initial Teaching Alphabet program (I.T.A.) in other places.

Because they can write any word they can say, the children are developing much more sophisticated vocabularies and their creative writing ability is truly astounding! Their world is no longer a world of Dick, Jane and Spot as they "look, look, look and run, run, run" but a world of spaceships and real life adventures— a much more exciting world. The children are taking advantage of their "power" to express themselves in writing and are doing much more writing than would be expected in a typical first grade. Most of the children are able to read materials written in both alphabets and are able to move from one to another without difficulty. Because the teachers have stressed comprehension, the children understand what they are reading.

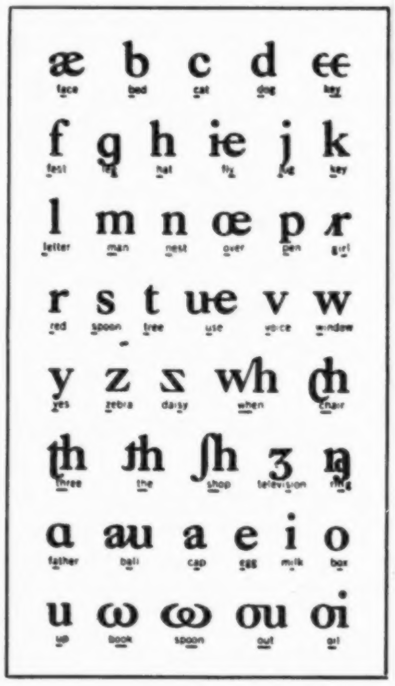
As the children must pay very close attention to the pronunciation of each word their speech and diction has been exceptional.

Last fall the new alphabet understandably seemed strange to everyone. However, parent reaction has been favorable. Most parents are very pleased with the progress of their children. Mrs. Robert Hesse states, "We are very impressed. Our daughter is doing a great deal of reading in both alphabets and is able to write her own stories without our assistance."

The teachers, Mrs. Marion Hughes, the reading consultant, and Elementary Principal Thomas Barresi are extremely pleased with the program. They feel that the I.T.A. program is superior to traditional methods of teaching reading. Teachers are discovering that children can learn concepts and develop skills that previously have not been taught until the third grade.

Mr. Barresi and his teachers feel that a child should begin to learn to read when he is ready to do so. Our kindergarten teachers are using the Initial Teaching Alphabet program with those children who can profit from it.

The visitors have been so impressed with the value of the program that many of them will, no doubt, follow the lead of the Fredonia Central School District and use the I.T.A. program with their children next fall.



# I.T.A. RESULTS OUTSTANDING

Our first grade students and their teachers at the Eagle Street Foundation chool have just completed their first ear with the new Initial Teaching lphabet (I.T.A.) reading program. To help evaluate I.T.A., several tests printed in the regular alphabet) were iven at the end of the year. The purpose of this brief article is to share he outstanding results of the tests with ur readers.

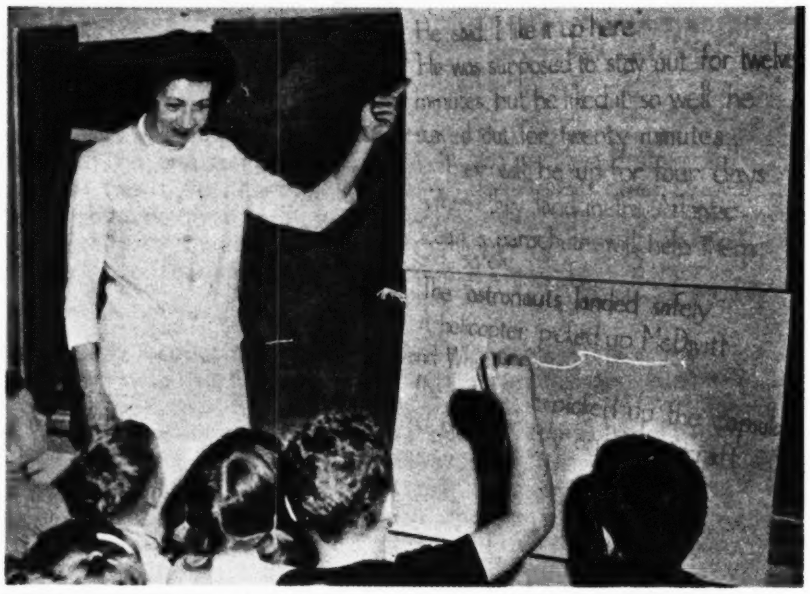
### The Test Results

By the end of the year approximately 5% of the students had completed he I.T.A. sequence and were reading he conventional alphabet. Actually, the hildren are able to switch back and orth from I.T.A. to the regular alphabet with ease. Some children will complete their I.T.A. sequence in second grade and a few need a longer period of instruction in the first grade. As predicted, many of the children are reading at about a third grade level in the egular alphabet! This would not occur n a typical first grade. *Obviously, eading achievement has been advanced under the I.T.A. program.*

Spelling achievement is just as remarkable. On formal spelling tests, a najority of the children were able to pell 90% of the regularly spelled econd grade spelling words!

Because they can write any word they can say, the children have developed nuch more sophisticated writing and peaking vocabularies. *Their creative vriting ability is outstanding.* This early start in creative writing should be extremely valuable to the children as they move through school. *In addition,* teachers have noticed that the speech of *the children has greatly improved under the I.T.A. program.*

The children seem much more eager to read. *They read more books than typical first graders.* Some of the children have read more than 100 books this year. Providing these eager readers with enough reading material has been a pleasant problem.



**READING THE REGULAR ALPHABET**—*Most of Mrs. Jayne Gent's first grade children were reading quite advanced material in the regular alphabet by the end of the year.*

**All of the formal tests given to measure word recognition, speed of reading, accuracy, understanding and reading level indicate that our children who have learned to read with I.T.A. do much better than children who have not. More important, the I.T.A. program has made learning to read easier for our children. They have learned to read without frustration.**

Our kindergarten teachers have informally introduced the I.T.A. sound-symbols to their students this year. This means that these students will be able to begin reading even earlier when they get to first grade next year. Based on their experience this year, our teachers plan to make significant improvements in the program.

To share the results of the Fredonia program with other teachers and to gain additional knowledge about I.T.A., Mrs. Marion Hughes, district reading teacher/consultant will attend the Second International I.T.A. Conference and Workshop to be held this summer at Lehigh University in Pennsylvania.

### Conclusion

The I.T.A. program will not work "miracles" or solve all of our educational problems. Its main purpose is not to accelerate academic achievement. *It is simply a good way of making learning to read easier for our children* and we are proud that our district has pioneered in making the new program available to our children. The goal of the Eagle Street Foundation School is "to give every child the best possible start in school." The I.T.A. program has significantly contributed to this goal.

## 2. TEAMWORK -- A NECESSARY CONDITION OF RESEARCH IN PUBLIC SCHOOLS

William T. Callahan
The Education Council
Mineola, New York

It is not really too difficult to design an effective and efficient educational experiment. The major difficulties are quite well known, and procedures have been developed to deal with most of them. When it comes to the very practical business of executing a study, however, the position of the educational researcher might well be likened to that of a chemist attempting an organic analysis in a grist mill or a biologist dissecting *Squalus acanthias* with rubber instruments.

The i.t.a. research project being conducted in New York State is a true team effort encompassing the State Education Department, Hofstra University, THE EDUCATION COUNCIL for School Research and Development and 11 school districts. This co-operative mode provides a spread of those situational factors necessary for meaningful research, allows for the sharing of considerable physical, financial and intellectual resources, pools the risks involved, and establishes a network for the dissemination of findings -- the area in which most research falls short.

Research is one of the developmental functions in education but it is the function which draws the least financial support from local boards of education and taxpayers. How, then, do we finance the i.t.a. study?

For a reasonably well-designed project with adequate facilities, participating schools and research staff, State-aided Experimental Programs was the answer. In New York State, the Education Department supports a limited number of proposals. Evaluation of and action on proposals is taken on a tight schedule and is guided by in-house professional staff. Support for our project, then, comes largely from Albany, with the balance contributed by the school districts on an ability-to-pay basis. At the conclusion of the experiment, this type of arrangement will have drawn almost $300,000 in support.

Hofstra University provides the base of operations for the project. On the task force are specialists in reading, curriculum development, supervision of instruction and in research design, statistics and computer applications -- the technical skills necessary to the design and execution of meaningful educational research.

THE EDUCATION COUNCIL administers the i.t.a. research project at a time when research administration is coming to be considered a specialized field. While little is known (or can be said with modesty) about the competencies that qualify persons for such tasks, it can be estimated that in the present age of specialization, it is unlikely that the people best qualified as experts in reading, research design, psychometrics and/or statistics would also be best qualified to administer a research project. Financial control of between $50,000 and $80,000 a year -- for this project alone -- requires special skills; similarly, a person with an administrative background can frequently communicate more effectively with other school administrators regarding the study, freeing the research specialists of much of the detail that might otherwise impede progress on the project.

Our experience with the i.t.a. project indicates that the problems encountered require the spread of skills found only on teams of professionals. In terms of the theory of educational research, these problems are admittedly trite -- communications, finance, dissemination, administrative control and the like -- but theoretically insignificant factors frequently constitute the most serious pragmatic problems.

The i.t.a. research team -- Education Department, Hofstra University, THE EDUCATION COUNCIL and 11 school districts -- has been able to overcome all problems encountered to date -- which is, after all, the pragmatic measure of team success.

## 3. PROGRAMS FOR EXPERIMENTATION AND INNOVATION IN EDUCATION

Richard J. McCowan
New York State Education Department
Albany, New York

Francis Keppel (1966) has noted that education is America's largest industry. During the mid-1960's with 123,000 schools, 55 million students, 2.4 million teachers, 100,000 supervisors and administrators and 144,000 board members, approximately 40 billion dollars was spent on all levels of education. Despite this, in 1965 less than one half of one percent of this total was spent on research to improve education. Compare this to the ten percent of gross revenues spent by some industries on research and development. In 1965 the federal government spent close to a billion dollars on medical research and 200 million dollars on agricultural research. However, more money is available for educational research each year. In the fiscal year 1966, for example, the Office of Education had a budget of nearly 100 million dollars which was one hundred times larger than a decade earlier, and four times larger than 1965.

Consequently, despite the comparative inequity in the amount of money devoted to research in education, numerous sources of State and Federal aid are available for use in a variety of ways. It is not true, however, that money is easily obtainable for research projects. Trite ideas and poorly written proposals have a slim chance to be funded.

Nevertheless the myths persist and individuals will, with great optimism, seek funding for a project that lacks imagination with a budget that exceeds the limits of rationality. It is farfetched to assume that a "way-out" proposal with no basis on which hypotheses can be established should be funded by a State or Federal agency, when a local school district is reluctant to share in the costs. The exotic proposal, the lavish proposal, the biased proposal, all of these are poor risks for funding. The individual who is interested in developing a proposal should attempt to approach the problem as a scholar with objectivity. Unfortunately, personal bias can seriously limit the effectiveness of educational research.

Many educators are keenly interested in curriculum innovation and research. However, strong arguments have been presented which imply that it is not possible to conduct research in the curriculum area. Mortimer J. Adler (1939) has stated that the basic problems of education are normative and involved in moral and political philosophy. Consequently, he feels they cannot be answered by science or research. Gilbert Highet (1954) suggests that teaching is essentially inspirational, since students emulate great teachers. Such critics feel that research is inappropriate because these phenomenon defy interpretation.

The complexity of curriculum research must be acknowledge. The confusing and conflicting forces which operate within the social system known as a school involve variables too numerous and complex to be identified. This does not mean that effective research cannot be conducted in public schools. The New York State Programs for Experimentation and Innovation in Education represent a major innovation and demonstrate that sound experimentation is possible in local school districts. The programs were established by the New York State Legislature in 1958. The impetus was the launching of Sputnik in October 1957. Initially, reflecting the prime national concern, focus was placed on mathematics, science, and the education of the gifted. The primary purpose of these programs was to aid local school districts to conduct research in innovative educational practices with financial and consultative assistance. In 1960, English and foreign language were added to the subjects which could be investigated. In 1963 the Commissioner of Education was authorized to extend the program to include other groups of children, at his discretion. Finally, in 1964, social studies and programs for the disadvantaged were included. From 1958 to 1960 a yearly sum of $200,000 was allocated for Experimental Programs. In 1961 the appropriation was raised to $300,000. The available funds were raised to $500,000 in 1966 and to $559,000 in 1967. The programs have involved 6 Board of Co-operative Educational Services and 151 school districts in 99 different projects.

One of these projects which is an excellent example of good design in curriculum research is a study entitled "Beginning Reading -- the Effectiveness of i.t.a. and T.O." conducted by Harold J. Tanyzer, Harvey Alpert and Lenore Sandel from the Reading Center at Hofstra University. The details of the study are of great interest, but for the purposes of this paper, are not of primary interest. The point which should be emphasized is that the project was funded through the use of New York State funds for Experimentation and Innovation in Education. The project also illustrates the effective co-operation which can be developed between a State agency, The Education Council, a Title III School Study Council, Hofstra University and 11 local school districts.

An agency such as the Division of Research of the New York State Education Department has numerous responsibilities. These range from answering letters from little girls who might ask for proof that Americans are more cultural today than they were 10 years ago, to administering large scale research projects. The latter activity, the administration of research, is becoming increasingly more significant, since research is more complex and continually involves a larger number of people. The stereotype of the scientist laboring into the hours of the early morning in an isolated laboratory may be popular in horror movies, but is not representative of the broad co-operative effort which is necessary to complete a project such as the study by Tanyzer, Alpert and Sandel.

The role of the research administrator is complex. He acts as the co-ordinator, the catalyst, and often the errand boy for a project. A variety of skills are required to perform the task in a competent manner, particularly a wide background in a variety of educational areas. The greatest occupational hazard which exists is the danger that the research administrator will become a jack-of-all trades and a master of none. It is extremely difficult to specialize when the variety of projects cover all grade levels and all subject areas as the New York State Experimental and Innovative Programs do.

A major problem with which an agency is faced is the resistance to change which exists among school personnel. Innovation is often painful and difficult to accomplish. Gotkin and McSweeney (1967) commented on the problems faced by innovators at the beginning of the Industrial Revolution, when the very fabric of society was modified.

> Inventions led to increased productivity and to the outdating of the workers' skills. William Lee's knitting machine could rattle out stitches fifteen times faster than the most accomplished knitter. Such inventions doomed craftsmen whose craft has been learned over generations, and numerous acts of violence, beginning at the end of the seventeenth century, accompanied the development of these machines. For example the city council of Danzig hired an assassin to strangle the inventor of one labor-saving ribbon loom. In the middle of the eighteenth century, the home of John Kay, the inventor of the flying shuttle, was wrecked and he was forced to flee the country. The word "sabotage," which comes from the French "sabot" meaning "wooden shoe," derives its meaning of obstruction from workers placing "sabots" in factory machines.

The parallels which can be drawn with education are numerous. The hostility with which many school districts resist reorganization may not result in assassination, but often seems close to that point. Often distrust will develop among many teachers towards such techniques as programmed and computer-based instruction. A number of educators feel that research is of relatively little value and that innovation, in view of the successes of the past, is unnecessary.

A related problem is the too rapid and undiscriminating acceptance of fads. Mager (1966) observed that programmed instruction, as all new technologies, had a period during which there was a false sense of development marked by excessive enthusiasm and overselling. The second phase is marked by a disenchantment when it is realized that the technology leaves something to be desired. The final stage is one of mature and gradual growth. This phenomenon can be related to educational innovations, whether or not they involve technology. Initially school districts, particularly the type of district found in middle and high income suburbs, will flock to participate in a new teaching method which has received wide publicity. The reaction has occurred in relation to activities such as team teaching which was adopted most readily by many schools without any effort being made to evaluate the effect.

An author who shall remain nameless discussed a team teaching "experiment" which involved only gifted children. At the end of the year the Regents grades of these children were compared to the other students in the class who were of average and below average ability. When the "experimental" group achieved higher grades, the program was hailed as a great success. Unfortunately much of the so-called research conducted in local school districts is seriously deficient in the adequate use of controls and experimental design. Researchers bear the almost evangelic responsibility of protecting educators against such errors, which are extremely costly in terms of time, money and the potential damage done by false conclusions which could be drawn.

The basic errors in project planning must be avoided by individuals interested in becoming proficient in the game of grantsmanship. The established rules should be learned and followed. The list of comments which follow are not intended to be exhaustive, but represent certain problem areas which could cause difficulty or delay the funding of a project.

1. Contact the agency responsible for funding and study the guidelines or instructions for preparing a proposal.

2. Pay particular attention to details such as deadline dates and the

number of copies of the proposal which must be submitted. It can be annoying to receive three copies of a proposal after the closing date when ten copies are needed for the reviewers.

3. Follow the established format which is specified in the guidelines. If this is done it is less likely that important points will be omitted or overlooked by the reviewer.

4. Identify the problem specifically and list the hypotheses clearly.

5. Survey the literature, become familiar with pertinent research, and relate the problem to successful educational practices.

6. Define terms which are crucial to the problem. Include any unique or specific definition of well-known phrases or words.

7. Organize the procedures logically and in detail. Select the statistical procedures to be used before conducting the study.

8. Attempt to discover areas of priority in which the funding agency is most interested. There is, for example, great national interest in the problems of the disadvantaged student.

9. Utilize the services of consultants, if the necessary skills and competences are not available from available staff.

10. Accept rejection as graciously as possible. Ratings on proposals are the composite opinions of a number of evaluators and often good projects must be rejected when compared objectively to those which have been submitted. Try to find out if the project can be revised and improved and possibly resubmitted.

The educational researcher, as a member of a relatively new profession, is in a position to have a substantial effect on education. The most crucial questions in education, including some of the most basic problems such as grouping, class size, and the education of the disadvantaged, remain to be answered. The conditions necessary for creative, high-level research exist today to an extent never realized before. In this desirable climate for change, the researcher will be able to contribute most effectively to the improvement of society.

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## PART V - THE FUTURE

Elsewhere in this volume, there is a section which discusses the historical backgrounds of i.t.a. If i.t.a. has a long history, the question remains, will it have a comparable future? Similarly, if children *do* learn to read and write with greater skill and enthusiasm as the proponents of i.t.a. claim, what will be done with their superior techniques and attitudes? There is evidence from programs such as Operation Head Start that, if one is successful in the initial learning experience with a particular group, unless specific special efforts are made to maintain any early advantage which may be achieved, the advantage will rapidly disappear. Head Start children who return to conventional classes rapidly fall back to the levels of their contemporaries who were not in such special programs. Thus, it seems almost pointless to ask how long any advantage gained from i.t.a. may last unless the creative educator develops some way (independent of i.t.a.) of maintaining early gains.

The reader will find few answers and many challenges about what to do after i.t.a. The first paper in this series is an attempt to reply to critics of i.t.a. There is no question that Sir James Pitman's alphabet represents one of the most controversial issues in modern education. It is crucial to the future of i.t.a. that the criticisms leveled against the alphabet be examined carefully, objectively, and honestly. It is crucial also (for the entire field of education) that criticisms of innovative ideas be *raised* honestly and objectively as well. A recent article in *Elementary English* which raised questions about the value of i.t.a. authored by Dr. E. A. Enstrom was entitled, "Wanted: Unbiased Answers." In the November 1967 issue of *Elementary English*, there is a rebuttal by Mr. Wayne M. Paxson entitled, "Wanted: Unbiased Questions." It is clear that this is an area relatively charged with emotion. In one sense, nothing could be healthier for the field of education; in another, nothing could represent a greater threat. Ultimately, each individual must make his own decision based upon direct experience with i.t.a. supplemented with his evaluation of the completeness, honesty, and objectivity of the material written about it.

The paper by Dr. Robert Bainbridge probably epitomizes the title of these proceedings (i.t.a. As A Language Arts Medium) to a greater degree than any of the others. He notes that, as long as we confine our investigations to the readily measurable, we will not begin to tap the values of i.t.a. as a language arts medium.

Dr. Rebecca Stewart emphasizes the communication aspects of i.t.a. Few educators have had as much opportunity to be as concerned about what happens after i.t.a. as has Dr. Stewart. It was in Bethlehem, Pennsylvania that i.t.a. was first introduced on a large scale in this country. As a result, Dr. Stewart has had an opportunity to observe children who started their formal educational experience with i.t.a. in 1963. She emphasizes that the advantages realized with i.t.a. can and must be developed in a subsequent language arts curriculum.

Dr. Rychard Fink presents the greatest challenge in this series. He questions whether we are doing so well in education and/or that our educational needs are so small as to justify the strong expressions of resistance to i.t.a. found in many educational quarters. He presents us with a challenge for research and development in i.t.a. that represents an appropriate conclusion to the proceedings of the Fourth International i.t.a. Conference.

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## 1. CRITICISMS OF i.t.a.

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In the recently published *i.t.a. Symposium* (Downing, 1967a), Sir Cyril Burt comments, "In the past, a wide variety of ingenious schemes with similar aims in view have been put forward; but, certainly during my own lifetime, none of the many suggestions advocated by psychologists, by linguists, or by teachers themselves, has ever aroused either so much interest or such vigorous criticism as the introduction of Sir James Pitman's Augmented Roman Alphabet."

i.t.a. was introduced into America on a relatively small scale in 1963 and has probably been one of the most widely discussed, investigated and adopted educational innovations throughout the English speaking world. Many educators have either been directly critical of i.t.a. or have raised "questions" about it. Despite this, as Mr. Downing notes in *The i.t.a. Symposium*, his initial studies in 1961 involved considerable effort in obtaining co-operation from 20 schools for the i.t.a. group; today, the estimated number of schools using i.t.a. in Great Britain is approximately 1,800. While no figures are available for the United States, there seems to have been a comparable growth, beginning with the first studies in Bethlehem, Pennsylvania, to the use of i.t.a. in almost every state in the United States, with an increasing number of school systems adopting i.t.a. for all first grade classes.

Recently, a number of articles have been published which have attempted to point out the weaknesses of i.t.a. In 1967 Mr. Downing published an article in the *Phi Delta Kappan* entitled "What's Wrong with i.t.a.?" In the January 1967 issue of *Elementary English*, an article entitled, "Wanted: Unbiased Answers," was published which suggested that many answers to questions about i.t.a. have been biased. In all fairness, it should be noted that the author, Dr. E. A. Enstrom, prefaces his article by stating that he hopes to encourage "thoughtful consideration of all aspects as an antidote to blind adoption." Dr. Enstrom is identified in the article only as a Research Specialist from Greensburg, Pennsylvania. In an article entitled, "How Shall We Teach Handwriting?", published the following month in the same journal, he is identified as Director of Research and Instructional Development for Peterson Handwriting, Greensburg, Pennsylvania. Last year, the *Phi Delta Kappan* published an article by Dr. William B. Gillooly (an Assistant Professor of Education at Johns Hopkins University), entitled, "The Promise of i.t.a. is a Delusion."

Some of the criticisms leveled at i.t.a. may indeed be valid. Certainly, many of Dr. Enstrom's questions deserve close analysis. Unquestionably, they all deserve unbiased answers. In its role as a clearinghouse for information about the Initial Teaching Alphabet, the i.t.a. Foundation obviously supports the use of this new medium. We hope that it does not do so without a careful consideration of the evidence. Claims for the effectiveness of i.t.a. should not be exaggerated. There is a moral obligation to children who will learn to read through this medium that its development, evaluation, and promotion be on an educationally sound and ethical basis. Criticisms of and critical questions about i.t.a. must be carefully examined and evaluated in light of the available evidence.

### The effect of publicity

One i.t.a. criticism deals with the amount of publicity associated with it, particularly in its early stages of development. Enstrom (1967) questions the effect of this, and Vernon (1965) comments upon the extent to which "....the glare of publicity which so unfortunately has gone far to invalidate the results of Mr. John Downing's investigation in Britain." Certainly, there has been much publicity about i.t.a. as an exciting innovation. This was undoubtedly necessary to overcome the great inertia of history and resistance to change that seem to be all too integral a part of human behavior. Professor Vernon's comment continues, however, "We may have to await a final judgment until the politicians and the general public have lost interest in the matter, and the educationists are left to consider it rationally and objectively, 'all passion spent'." Enstrom fears that the publicity may cause "some educators to adopt the program before true value has been determined by sound, extensive research." I maintain that, in contemporary American society, the public is deeply concerned with educational theories and practices. It is a relatively well educated and sophisticated public and "educationists" must learn to operate within the spotlight of publicity. They must not be blinded by it, but such publicity and pressure from the public can require us seriously to reconsider our practices and provide appropriate professional defense against change where it is unwise or unwarranted. Further, with regard to Dr. Enstrom's comments about adoption before value has been determined by sound extensive research, I would contend that only a very limited number of our present educational practices are supported by as much research as has gone into the evaluation of i.t.a. thus far.

### The Hawthorne effect

Probably the most widely cited "artifact" with regard to i.t.a. is the possible influence of the Hawthorne effect. Both Enstrom (1967) and Gillooly (1966) raise this question as do Ohanian (1966), and Vernon (1965). I have questioned the net effect of the impact of the Hawthorne effect elsewhere (Block, 1966a). Recently, in *The i.t.a. Symposium*, a number of psychologists and educators commented upon the possible role of the Hawthorne effect in Mr. Downing's study in Great Britain. Vernon (1967) notes, for example, "It is impossible to decide whether these factors were, on balance, favourable or unfavourable to the teaching of i.t.a., or had no effect." In the same volume, Wall (1967) notes, "It is further worth remarking that we know very little about the alleged Hawthorne Effect (which arises as a concept from a study of *adult workers*) in terms of five to seven year old children and their teachers. *A priori* reasoning would suggest that it is probably very different and, since the first years of school are, for most children, a period of heightened emotionality anyway, it *may* be negligible." Hemming (1967) notes further, "Nor am I much impressed by those critics who put this down to Hawthorne Effect. If the Hawthorne Effect is indeed as great as some critics suggest, *then we should have to write off here and now all research into method based on matched groups hitherto attempted, including much of the research on which the methods supported by the critics are based."* (emphasis supplied). Emphasizing the complexity of determining the direction of Hawthorne-like variables, Neale (1967) notes that "....perhaps other conditions may have had a compensatory effect. Not the least of these would be the professional pride of the control teachers to 'prove' their teaching ability in the use of traditional orthography. Again, the reinforcing quality of everyday stimulation by the printed word in advertisements, television, comics, children's picture books, etc. seems likely to favour the control group. Still further, the availability and range of supplementary reading materials during the teething stage of the experiment seems to have favoured the control group. If we consider also the effect of parent teaching of reading by i.t.a. it seems, to the writer, that the ambivalent feelings of a number of parents to the new medium may have also put the experimental group in a less advantageous position."

## The adequacy of research

A number of critics have commented in one way or another that i.t.a. research does not meet the usual standards of quality research in education. Professor Gillooly is quoted in a recent issue of *The Baltimore Evening Sun* as indicating that many i.t.a. experiments lack proper controls (Rodgers, 1967). Enstrom (1967) raises the issue of the influence of experimenter bias in his question, "Should some of this 'research' be conducted by the skeptical rather than by those whose bias blind them to existing problems?" He also questions the "practice of translating standardized tests to i.t.a." as a valid procedure. It is my contention that studies conducted in i.t.a. have, on the average, been *at least as well designed and executed* as educational research of this nature will permit. Many have been far more intensive and extensive than studies in support of comparable educational practices. i.t.a. studies are conducted in the classroom rather than the laboratory. Under these conditions, i.t.a. studies can be considered at least as well controlled as most. Wall (1967), in summarizing the evaluations of others with regard to Mr. Downing's research, notes that, "It is possible that answers to the specific problems posed or to others which have been put would have been more easily obtained and more surely established had the research team adopted an entirely different approach. This is something which I personally doubt, in common with many of the contributors to this book. In matters of the present kind, the field study is ultimately always necessary, if only to test the ideal against the real.

"A field trial of the present kind has certain very great advantages. It takes as its starting point, teachers, classes, schools and children as they are in the day to day business of education rather than an ideal or laboratory situation. Anything certainly established in these circumstances is likely to be readily generalizable and establishes -- as Burt points out -- a *prima facie* case."

Enstrom (1967) also questions, "How much actual, true, published research exists in support of i.t.a.? Does sheer opinion overshadow and color most reports?" The interested reader is referred to the i.t.a. research abstracts in various issues of *the i.t.a. Foundation Report*, and is urged to look at the original sources to evaluate the quality and quantity of i.t.a. research. In addition, I have prepared a critique of i.t.a. research which notes the range of methodological errors in all studies (Block, 1966a). I have dealt with the inadequacies of traditional reading measures in some depth elsewhere (Block, 1966a) and have raised the question of the adequacy of measures developed to test reading when taught with the assumptions inherent in most T.O. basal series for the evaluation of i.t.a. In all probability they operate to the *disadvantage* of i.t.a.-taught children. Hemming (1967) is similarly critical of "transliterated" reading tests for testing i.t.a.-taught children.

## Alternative solutions

A number of investigators have asked whether much of the positive effect of i.t.a. could be achieved by other methods. They raise the question as to whether these results may be attributable to some "total package" rather than to a simple change in the alphabet. Enstrom (1967) asks whether or not there are other ways of achieving the same results. Ohanian (1966) has suggested that many of the characteristics present in the i.t.a. materials most commonly used in America go beyond a simple change in the alphabet. She believes that some of these desirable features could be built into a reading series in traditional orthography. Diack (1967) also indicates that readers in traditional orthography may be designed to produce some of the apparent benefits of i.t.a. Wall (1967) summarizes Diack's observations and says, "Diack, of course, points out that simplification is possible within the ordinary orthography and alphabet, if the teacher is prepared to exploit such regularity as exists already in English and suggests that all that has been proved is that alphabetic approaches to reading through phonically graded material may be better than others. Though this begs most of the important questions, it betrays a left-handed kind of agreement. In any case, a much wider vocabulary with regular grapheme-phoneme correspondence is available in i.t.a. than could be with the current alphabet and spelling."

Mr. Downing's studies in England have attempted to manipulate only the alphabet, while holding methods and materials constant. Studies in this country have simultaneously manipulated both. While Downing's studies have been generally positive, as Wall suggests, i.t.a. readily permits the introduction of other theoretically desirable practices. These practices may not always *demand* new materials and methods, but they certainly *permit* and *facilitate* a new and exciting approach. Morgan and Procter (1967) note, for example, "Similarly, it will not, of itself, lead to a greater love of reading, to a greater understanding, to greater appreciation, or to a greater personal response. It may make these *possible* but the teacher will need to intervene, and other circumstances be favourable, for this to happen. Nor will the transfer in reading from i.t.a. to T.O. necessarily be a spontaneous affair; the teacher may need to take steps to bring it about (and some steps may be better than others.) In like fashion, the child using i.t.a. will not necessarily *want* to communicate in writing; this wish has to be awakened and usually by the teacher. Subsequently the child may write more, and use a fuller share of his own vocabulary, but it will not therefore be richer and better in quality -- in its structure and content. i.t.a. may help to make these possible, but the teacher must add something to make them *actual*. ...But the tool can not be better than the workman who uses it; it can make some things *possible*, but it is the workman who must make them *actual*."

## Adequacy of results

In addition to these issues, a number of investigators have raised various questions about the nature of the results obtained with i.t.a. Enstrom (1967) suggests that i.t.a. is "especially prone to produce 'readers' who perform beautifully without gaining meaning from the page." I would argue that an alphabet per se cannot provide meaning. Obviously the effectiveness of i.t.a. will depend upon the materials used, the teachers' effectiveness, etc. If a child does not understand the meaning of what he is reading, then certainly a change in alphabet will not help. Nonetheless, i.t.a. teachers report greatly heightened activity. It is difficult to imagine that children would persist in reading if, as Dr. Enstrom suggests, they do not understand what they are reading.

Some writers have also questioned the acceptance of i.t.a. since many studies have not yielded significant differences. Dr. Gillooly, cited by McBroom (1967), notes that the U. S. Office of Education studies failed to produce positive results. McBroom also quotes Gates as saying that i.t.a. is justified only if it proves to be clearly superior to other methods.

There are a great many studies which suggest that i.t.a.-taught children perform significantly better even when traditional tests of reading are used as the criterion, despite the inadequacy of such measures and the fact that frequently they are administered before transition has occurred.

Studies which show a significant advantage for beginning readers at the end of the first year of instruction include, Alden and Manning (1965); Bosma and Farrow (1965); Downing (1965); Jameson (1965); Mazurkiewicz (1965); Monson (1967); Montesi (1965); Myers (1965); Regan (1965); Shapiro (1966); Sloan (1966); and Wapner (1967). Studies indicating an advantage to the i.t.a. group after two or more years of instruction include Downing (1967); Monson (1967); Montesi (1967); Stewart (1965); and Tanyzer, Alpert and Sandel (1966). Each of these studies was conducted with essentially "normal" subjects. Other investigators have studied special groups with i.t.a.-taught subjects scoring significantly higher. Clark (1966) used culturally disadvantaged adults in a remedial program; Dunn, Mueller, and Neely (1966) used culturally disadvantaged children in beginning reading; Gardner (1966) reports on a group of 140 children with I.Q.'s between 80 - 90 in a remedial program, and Kidd and Horn (1967) report success with a group of children with I.Q.'s between 50 and 80 who were classified as Educable Mentally Retarded. Thus far, *no study* indicates i.t.a.-taught children read significantly more poorly than T.O.-taught children.

A number of critics have suggested that gains for i.t.a. children may be quite temporary. Enstrom (1967) questions, "Is this a rapid flash that soon vanishes? Is there a difference in grade four? In five? In six? Later? If not, are we justified in expending huge sums of money per room and great energy for a short-gain program?"*

Vernon (1965) questions the permanence of any differences found at the end of an i.t.a. program. Burt (1967) notes, "....for a final evaluation we should, I think, still wait until the pupils concerned have approached nearer the end of their school careers."

I have dealt with this problem elsewhere (Block, 1966a). We may note here that if, indeed, there is an advantage in favor of the i.t.a.-taught children at the conclusion of their training in i.t.a., it will likely be obscured if the subsequent T.O. curriculum is not modified to take advantage of this difference. Further, if one is concerned about long-range effects, it is unfortunate that we do not have adequate measures of the child's "love" of reading. It is possible that, once an individual reaches a certain level of reading ability, his skill reaches a nearly asymptotic level. On the other hand, there are many "literate" adults who would perform effectively on most measures of reading ability who do not enjoy reading.

### Side effects

Another major issue of concern to i.t.a. critics is represented in a series of "speculations" about undesirable side effects of i.t.a. Enstrom (1967) notes, "Often in medicine we find a cure for a particular ill, but the many side-effects outweigh the original cure. Is it not conceivable that there is a host of undesirable side-effects from i.t.a.?" McBroom (1967) states, "Perhaps more important, there has been no careful study of the possible emotional side-effects as children switch from i.t.a. to the traditional alphabet." Fry (1967) asks, "Will some systems of improving the phoneme-grapheme relationship increase the efficiency of a child or adult learning to read, and will there be a lack of undesirable residual or side effects?" Enstrom (1967) also questions whether or not there may be handwriting failures resulting from i.t.a. He notes, "From my observation, pupils using i.t.a. generally produce very poor script."

Thus far, no studies of the handwriting of i.t.a.-taught children have been undertaken, although it is clear that i.t.a.-taught children write *much more* than T.O.-taught children. Dr. Enstrom's personal observations are the only citation of this problem with which I am familiar. The "side effects" which *have* been observed with i.t.a., however, include a great increase in quantity of children's writing, a greater sense of student independence, and enjoyment.

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* The question of the cost of i.t.a. is dealt with later in this article.

While there are few, if any, objective measures available of attitudes, to the extent that one can accept the observations of teachers who work with i.t.a., the side-effects appear to be quite positive. Thus far, there is *no* evidence concerning undesirable emotional side effects, either in learning with i.t.a. or the transition from it. I have discussed some positive "side effects" in greater detail in an article entitled, "If i.t.a. Children Scored No Higher on Reading Tests" (Block, 1967). Essentially this paper contends that the side effects observed thus far have been sufficiently positive to justify the use of i.t.a. *even if* there were no improvement in scores on traditional reading measures.

## Spelling and Confusion with T.O.

One i.t.a. "problem" is the possibility of producing poorer spelling in T.O. Enstrom (1967) questions this, as does Gillooly (1966) who notes that "....... these effects may be surprisingly transient." Research results with regard to i.t.a.'s influence on T.O. spelling seem to be relatively clear. At the end of the first year, i.t.a.-taught children seem to spell significantly *more poorly* than T.O.-taught children when standardized tests of reading ability are used as the criteria (Fry, 1966; Hahn, 1965; Mazurkiewicz, 1966; Tanyzer, 1966; and Tanyzer, Alpert and Sandel, 1966), although some studies show no difference (Hayes, 1965) and some show that they spell better (Monson, 1967). When children's free writing is used as a criterion, the i.t.a.-taught children seem to spell significantly better than the T.O.-taught children (Fry, 1966; Montesi, 1965; and Stewart, 1965). It is possible that this discrepancy is a function of the fact that traditional reading tests are built upon the assumptions made in controlled vocabulary readers. The words used in such measures are chosen on the basis of content analyses of the most widely used T.O. series. These series tend to use a controlled vocabulary with a relatively high frequency of repetition of words. The most widely used i.t.a. series in the United States, and the one most frequently used in i.t.a. studies thus far, incorporates a greater number of words, but less frequent repetition of each. When the child uses his own vocabulary as the stimulus for "test words," it is probable that he will select those for which he has received the greatest reinforcement. Under these conditions, i.t.a.-taught children spell significantly *better* than T.O.-taught children. Perhaps more germane to the issue is the fact that, at the end of second grade, most studies show that the i.t.a.-taught children spell at least as well as the T.O.-taught children even when standardized measures are used (Fry, 1966 and Hahn, 1966), and some show that they spell significantly better than the T.O.-taught children (Monson, 1967; Montesi, 1966; Stewart, 1965; and Tanyzer, Alpert and Sandel, 1966).

Enstrom (1967) also questioned the confusion between the i.t.a. that children see in school and the T.O. outside of school. Most persons who have experience with i.t.a. have observed that there is little confusion on the part of the child and, in fact, simultaneous exposure to T.O. is assumed to facilitate transition. If, indeed, the critics are correct, the exposure to T.O. might tend to reduce the apparent effectiveness of i.t.a.

## Transition

Probably one of the most important issues and most widely raised questions on the part of both professionals and laymen with regard to i.t.a. is the ease or difficulty of transition. Enstrom (1967) raises this question as does Gillooly (1966). Research results, thus far, appear to provide an answer to the question. Apparently, children have relatively little difficulty in making the transition from i.t.a. to T.O. In discussing both i.t.a. and his own Diacritical Marking System (DMS), Fry (1967) notes, "Actually, informal observation leads us to believe that transfer is somewhat of a sham problem for both DMS and ITA, as a majority of children, before any type of formal transfer, were reading T.O. supplementary books for recreation."

Downing's (1967a) recent research raises the issue of an apparent "regression" with i.t.a.-taught children. His finding (supported by most research with i.t.a.) suggests that, when tested in their own medium (i.e., i.t.a. children tested in i.t.a. and T.O. children tested in T.O.) the i.t.a.-taught children read at a substantially higher level than the T.O.-taught children. When the i.t.a. children are tested in T.O., their grade performance is at a lower level than when they are tested in i.t.a., although they may still score significantly higher than the control group.

Hemming (1967) notes, "....*some,* check at transfer is a small price to pay for heightened confidence in the early stages. The research report suggests that the check is not serious." Wall (1967) observes, "No attempt was made to assist teachers in developing particular strategies to smooth the transition; nor was guidance given as to when the transition should be made. One would expect, therefore, that any set-back would be the more serious. It is, in fact, much less than one might reasonably fear and curiously enough does not seem to affect spelling -- rather the reverse."

In all research (whether dealing with i.t.a. or not), there is a question of when to administer final measures. In most i.t.a. studies, the definition of "transition" is vague. It usually refers to some point in time when the child has completed the last book in a particular i.t.a. series. Few, if any, investigators have indicated how long a child had been reading in T.O. and how fluent he was at time of testing in T.O. Both Behn (1963) and Fabiano (1963) have suggested that there may even be a setback in performance resulting from the shift from one T.O. basal reader series to another T.O. series. Further, additional and continued practice in i.t.a. might have beneficial effects on the transfer, although this has not been investigated. Reid (1967) asks, "Should i.t.a.-taught children perhaps not be transferred until they can read *silently* in i.t.a.? Here is another area where further investigation must be done." Holmes (1967) notes, "Downing wisely points out that transfer could be facilitated if the teaching materials, methods, and the timing of the transition stage from i.t.a. to T.O. were better understood so that the teacher would know how to maximize the chances of transfer in her students."

Downing (1967a, 1967b) has recently questioned whether or not some of the characters in i.t.a. should be modified to facilitate transition. His study was not designed to investigate this question, but he has made some observations which he believes call for further research. Artley (1967) and Holmes (1967) both agree. Reid (1967) cites Downing's analysis and notes, "In the part of the report that deals with transfer, the lack of any kind of clinical evidence is again a matter for great regret, for it is only on the basis of such evidence that decisions about fruitful changes in procedure can be taken. The nearest approach to this is the two lists of errors in T.O. words, on Schonell's list and in the Neale passages. But these lists do not report the number of errors made earlier, on the i.t.a. version, by the same children, nor the number made by a corresponding sample of T.O. subjects; nor -- most interesting of all -- the precise nature of the errors. So the reasons for the errors and the exact nature of them remain matters for pure conjecture....." In short, there is *no adequate evidence* that character redesign is essential. Indeed, one should remember that, with a change from a 26-letter to a 44-character alphabet, the magnitude of the change is considered negligible by some critics. At this point, one may ask, even if a few characters were modified, how much improvement would be likely? What would be the cost of such research in terms of both money and the length of time it would take to conduct it? First, the specific characters providing difficulties (if any) must be identified. If such characters are identified, one must decide on which of a large range of possible shapes should be considered as alternatives for an empirical investigation or if the number of characters should be changed. Further, alternative character designs as a solution to the problem (if one exists) must be tested against alternative instructional methods aimed at those children who may be troubled. I believe that the problem of possible difficulties in transfer, as a function of specific characters, for certain groups of students, *should be systematically investigated.* It would appear that, if there are problems, attempts to resolve them through the medium of instructional techniques would be an infinitely more economical approach than character redesign, which should only be undertaken after it is clear that other techniques are inadequate for a solution to the "problem."

## Copyright and Competition

Downing (1967b) raises the question of i.t.a. copyright status. In the first issue of *the i.t.a. Foundation Report* (i.t.a. Foundation, 1966), the i.t.a. Foundation in America agreed to "certify" i.t.a. materials with regard to the materials conforming to the spelling rules developed by Sir James Pitman and the use of the characters as he designed them. This certification is available *without cost* to *all* commercial organizations. The concept underlying the need for certification was founded on exactly the issues Mr. Downing raises. If a number of investigators are interested in modifying individual characters in i.t.a., Sir James Pitman's fear of a Babelization of i.t.a. may prove to be justified. If each publisher produces materials labeled "i.t.a.," but uses a different set of characters or different spelling rules, the public cannot be adequately protected. These materials would not be compatible with one another and they might not be compatible with the practices in the classroom. To obviate this possibility, without in any way violating the no-copyright characteristic of i.t.a., the i.t.a. Foundation has agreed to certify materials. "Certification" by the Foundation is a *service.* It is not in any sense *required* of publishers, who may produce i.t.a. materials without it.

Mr. Downing (1967b) suggests that, because of this "misunderstanding" of the copyright, there is limited commercial competition in i.t.a. in this country. He says, "In America there are few publishers of i.t.a. books, and one particular series dominates the i.t.a. market." It is true that i.t.a. Publications Inc. is probably the most widely used i.t.a. series in America. There are, of course, a number of other publishers.*

I do not believe confusion with regard to copyright is deterring commercial organizations in America from becoming involved in i.t.a. Almost all of the major text publishers in America have been invited and urged to produce i.t.a. materials. The fact that many have not done so appears to be based more on economic considerations than on a misunderstanding of copyright issues. In recent months, six different commercial organizations operating on an international basis have contacted the Foundation for information about i.t.a. To the best of our knowledge, each of these corporations is beginning to produce i.t.a. materials. Further, one of the largest children's textbook publishers in America has transliterated its basal reader series through the middle of the second grade into i.t.a. However, their materials are labeled as an "experimental edition," and they have asked not to be included in the catalog of materials published by the Foundation.

## Student Characteristics

A number of investigators have expressed concern over whether i.t.a. is appropriate for certain kinds of students. Enstrom (1967) has raised the question of the effectiveness of i.t.a. with slow learners, as has Gillooly (1966). Zeitz (1966) has similarly questioned the effectiveness of the alphabet with this group. Thus far, most of the studies conducted with i.t.a.

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* A complete list of publishers is contained in *the i.t.a. Foundation Report*, Vol. I, Nos. 2 and 3 (Combined Issue).

whether of a one or two-year variety, seem to indicate no interaction between the materials used and the I.Q. level of the students. That is, the data do not suggest that it is useful at one I.Q. level but not at another. There is a tendency for investigators to report a slightly greater difference between the experimental and control groups for the very bright children who seem to be able to get even more out of the alphabet than the somewhat slower children. Nonetheless, studies usually show that slower children do better in i.t.a. than they do in T.O. Further, a number of studies indicate that there is a percentage of children who apparently would have severe reading difficulties if taught with T.O. who appear not to have such difficulties when taught with i.t.a. Even if this were found to be true for only a very small number, such a result might itself justify the use of i.t.a.

Entrom (1967) further questions, "What provision does i.t.a. make for individual differences? In actual practice is this going to be another 'same dose for all' approach?" There is no reason to believe that an *alphabet* should be aimed at a single population. It is no more correct to say that i.t.a. makes no provision for individual differences than it is to say that our conventional alphabet does not. Critics frequently forget that i.t.a. is an *alphabet*. It may be used for many purposes just as is the case with our 26-character alphabet.

Further, as i.t.a. materials have been developed, it seems only natural that their content and the methods they employ have been aimed at the "average" child. At the present time, there are few materials prepared for remedial reading, adults, exceptional children or the slow learner. The number and range of such materials is rapidly increasing although it should be noted that existing materials and methods have been used successfully with these groups.

Finally, the observation that slow children seem to profit less from i.t.a. than faster learners may be an artifact of research techniques. In almost all studies, the final test is administered after a fixed interval of time (e.g. in one-year studies, after 140 days). Obviously, this is a constant calendar unit - not a constant learning unit. Not all children are at the same point of development in reading. The slow learner - almost by definition - may need a greater period of time for exposure to i.t.a. for meaningful comparisons to be made with regard to how much he profits from the new orthography in comparison with his brighter classmate.

Cost

One of the "criticisms" about i.t.a. appears to be what critics claim to be its "relatively high cost." McBroom (1967) quoting Gates notes, "The expanded alphabet is artificial, cumbersome, expensive (because of the cost of additional printed material)...." Enstrom (1967) has commented, "....are we justified in expending huge sums of money per room and great energy for a short-gain program?" Fry (1967) notes, "It is incumbent upon educational researchers to take a good hard look at any system which radically changes the type of materials used in beginning reading instruction, if for no other reason than that the financial implications are so large.... To switch from traditional books to i.t.a., for example, costs the school system about $12 per child for the first year." Obviously Dr. Fry is assuming that once a basal T.O. series is purchased, it need not be replaced. The crucial financial issue is any *difference* in cost, not the absolute cost. i.t.a. is actually no more expensive than any modern approach to the teaching of reading. There are some basal series which are less expensive than i.t.a. series, and some which are more expensive. One of the difficulties in evaluating the cost of a set of materials lies in the unit used. For example, one may easily show that i.t.a. is less expensive than traditional materials if one is concerned with the total number of words and/or pages in a series. In any event, the interested reader may readily compare the prices of reading series and discover the comparative costs.* More important than the cost per page or per book, of course, is the cost of reading failures, which might have been avoided if i.t.a. is effective. General claims that i.t.a. represents an "expensive" approach are unfounded.

## Conclusions

There has been much research exploring the effectiveness of i.t.a. I am aware of approximately 30 separate investigations in which control groups were used. Well over 15,000 children have been used in these studies, and the cost has been close to $750,000. In terms of their quality, they have been at least as good as any studies in education conducted in the real situation of the classroom. The majority of these studies show the children taught with i.t.a. perform at a significantly higher level than those taught with T.O., although many of the studies showed no significant difference. Thus far, *no study* has indicated that the i.t.a.-taught children do less well. This is true despite what I believe to be inappropriate measures used in the studies which operate to the disadvantage of the i.t.a. children, and further, despite the fact that most of the studies apply the criteria before a substantial number of children have made the transition, or had time to achieve fluency in T.O.

No undesirable side effects associated with i.t.a. have been identified. Rather, children clearly write substantially more, using more new words and more polysyllabic words than children taught with T.O. Further, while standardized measures are not available, teachers report a materially heightened interest in reading, self-confidence, and independence. I would argue that these changes alone would be sufficient to maintain continued interest in i.t.a., even if there were no change in basic reading skills.

It is possible that some of the positive effects of i.t.a. may result from a package of factors in addition to a simple change in characters. Nonetheless, as a number of authors have pointed out, Sir James Pitman's alphabet makes possible the use of many procedures which would be extremely difficult to accomplish in T.O.

Claims that the cost of i.t.a. may be excessive may best be evaluated by the individual administrator. I contend that there is no difference in cost between most i.t.a. materials and most modern T.O. reading series.

If it is true that costs are comparable, and that positive results, both in terms of reading skill and side effects, seem far more likely to occur than negative results, can we run the "risk" of a *failure* to use i.t.a. and deprive children of these benefits? I would argue that the claims of better performance on reading measures plus more writing and general interest on the part of the children are not "excessive," and that they can be, and in fact, have been documented.

This is not to say that further research should be abandoned. There are many questions which should be investigated. There have been few attempts to vary different methods of teaching i.t.a. We do not know the optimum point for transition for different groups of children.

In the field of special education, including work with the deaf and hard of hearing, the emotionally disturbed, the mentally retarded, the culturally disadvantaged, and remedial work with adults, we have much to learn about i.t.a.'s effectiveness.

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* *The i.t.a. Foundation Report*, Vol. I, Nos. 2 and 3 (Combined Issue) contains a complete catalog of all commercially available i.t.a. materials with prices for the United States, Great Britain and Canada.

All of i.t.a.'s promises have not been realized, as yet. But thus far, its critics' fears remain only that. It is interesting, therefore, that some should argue for the abandonment of i.t.a. at this point. It is encouraging that its acceptance appears to be increasing.

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## 2. NEW DIMENSIONS IN ASSESSING AND EVALUATING THE INITIAL TEACHING ALPHABET

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When the first transatlantic cable went into service, Henry David Thoreau reputedly posed the question, "But what will New York have to say to Paris?" On a recent trip abroad it occurred to me to find out the answer to this intriguing question for myself. So I placed a transatlantic call and talked with my wife, my sons and my mother. Out on the streets of Paris after these conversations, I concluded that I had transmitted a message of love, friendship and blessings, and suddenly in the summer sky there was Thoreau smiling his moderate approval.

Sir James Pitman must wonder each year just what another International Conference on i.t.a. can possibly have to say to the world of education. But I am venturing that he must also smile from time to time with a Thoreauvian satisfaction and approval on certain of the unexpected messages which have come to him as a result of his own innovation in the field of communication, which happily has become very much transatlantic. Beyond this, however, a rather striking chain of varied developments and benefits to education has evolved out of his original contribution to our profession in the form of the Initial Teaching Alphabet.

Those of us who have thoughtfully investigated the use of this new medium for improving instruction in general language development have shared Sir

James' own delight in discovering that not only does it greatly enhance many facets of the developmental reading program, but that most students learning with i.t.a. enjoy numerous concomitant advantages psychologically and emotionally as well as academically. Such a fact logically gives rise to the question, "If this be the case, *what then are the implications for assessing and evaluating both student growth and the dimensions of the medium itself?*" This paper represents an effort to provide for you a few relevant thoughts in partial answer to this significant issue, and to pose a challenge or two for those of us who are willing to live abreast of our times.

Recently while riding on a bus I was dispirited by a conversation between two teachers on the seat behind me. Speaking in a troubled and defensive fashion, one of these decision makers, to whom, in large measure, we have entrusted the destiny of our society, was telling the other how she handled the apparent problems associated with administration of state mandated end-of-the-year reading achievement tests. She explained that the tests had arrived a week before the testing date and that since other teachers were priming the children for the tests, she had done the same out of self-defense. Even now I am not certain what part of the "self" she was defending. Then she went on to say, among other saddening revelations, that with copies of the tests now available the teachers could organize their whole program for the year around the expectations of the instrument.

But lest we stop short with simply questioning such shallow abdication of the professional role on the part of the practitioner herself, it is important that we consider also the traditions, the so-called "leadership," and the societal forces creating a situation in which the machine eventually comes to control the man. Indeed, we have grown up within our profession in an epoch of tests and measurement which has conditioned most of us if not to believe, then at least to support the proposition that "if it exists it can be measured" as though we possessed the means of such wizardry. It is a fact to be acknowledged with enthusiasm that a growing wave of effort in the field of human assessment is producing more effective means for making certain kinds of judgments about an ever-expanding variety of human attributes and accomplishments. This very progress is breaking down the fixations and rigidities which have so long prevailed at the heart of that most delicate and complex business of evaluating human worth and progress toward "becoming what we might," individually and collectively. But our present patterns of evaluation and judgment, even within a specific emphasis of curriculum and instruction, represent only a fragmentary world, a fraction of reality.

Yet even at the leadership level in education we find great numbers of people investing precious man hours and millions of dollars in gamesmanship and charades in the name of measurement and evaluation. Unquestionably, one of the most persistent and pervasive crimes against human potential is to be found in our practice of honoring above all else the learner's capacity for memory-recall. How neatly and securely we can measure and grade the remembered fact, the recall of piecemeal trivia, largely the flotsam and jetsam of man's higher faculties and deeper essence. Is it any wonder that we hold fast to this objectification of learning which, with all of its denial of individual differences and vast areas of unexplored human intellect and spirit, has come to shape our educational objectives, our ways of teaching, our patterns of praise, the selection of our teaching materials, our testing procedures, our grading rationale, reporting practices, etc. Similarly we read about projects in Canada, England and the United States in which "conclusive" professional judgments and decisions of far-reaching consequence are based on the comparison of one reading approach with another within the narrow purview of the several components of student gain as traditionally measured on standardized reading achievement tests. And although such factors as self-concept, interpretive skills, sensitivity to language, capacity for generalizing learning, motivation and confidence, written expression, fluency of thought, earlier more immediate gains in literacy, understanding of the structure of language, independence in learning and a host of other important developmental gains are sometimes alluded to, or even nominally "measured" in some fashion, most of the policy-making decisions continue to derive from the circumspect statistical data of partially useful but risk-free, unimaginative and minimally productive assessment and evaluation research activities.

There was a time, which only now is coming to an end, during which we educators could move along through our years of service in gentle, happy fashion smugly content with the dictums and designs of an educational elite which found comfort and satisfaction in gradual increments of change and apparent "progress." But eduation's windowshade has gone up and our classroom door is open on the infinitely larger world characterizing the second half of the twentieth century. Not since the time of early Greece has man experienced such an explosive revelation of his inherent capacities and power as is the case today with all of the major fields of inquiry into the mysteries of man, from physics to metaphysics and psychology to parapsychology, disclosing one startling and promising finding after another. In the words of one eminent scientist, "Today every week is a breakthrough." We educators, above all, dare not ignore, or only half-heartedly interpret for our profession, the ever more rapidly accumulating revelations of those who seek to shed new light on our knowledge about ourselves, how we learn and move toward the higher promise which is evident, and, indeed, how we might more comprehensively engage in the measure of man as he sets about in a new way to pursue a new course in his quest for new goals.

It seems quite appropriate that I quote from Canada's own Marshal McLuhan (1967) who has been acclaimed "one of the most brilliant socio-cultural theorists of our day." In his much-discussed book, *The Medium is The Massage*, he punctuates the ever more insistent truth that everything today is in a dynamic state of change, "...forcing us to reconsider and re-evaluate practically every thought, every action, and every institution formerly taken for granted." He continues, "Innumerable confusions and a profound feeling of despair invariably emerge in periods of great technological and cultural transitions. Our age of anxiety is, in great part, the result of trying to do today's job with yesterday's tools - with yesterday's concepts." A striking illustration of this last point is the way in which most educators continue to talk almost exclusively about whether i.t.a.-taught children will be able to spell as well in traditional orthography as those who were taught to read and write in the conventional alphabet, and whether the word recognition, speed and comprehension scores are as high for i.t.a. classes as they are for some other approach, medium-based or otherwise. The stereotypic thought and action patterns which have victimized so many of us painfully illustrate the truth of the axiom, "As we begin, so shall we go."

Those of us who have sensed and observed for some time now that there was much more to the use of the Pitman alphabet than improved reading scores, have been remiss in our collective failure to insist upon and pioneer the establishment of new and more comprehensive objectives for the basic literacy program which could openly reveal the fuller potential of this new teaching medium. By and large we have stood by while i.t.a. was put to test in a Procrustean bed, provided by the "experts", without a second thought to the contemporary definition of an expert as "the man who stays put." In attempting to appeal to and indulge a largely self-fabricated sovereignty known as "The Reading Establishment", even those of us who know better and profess to have our hand on the pulse of education are just now waking up to what has happened in terms of the i.t.a. movement having sung only half a song to the profession at large. At the more prosaic dimension of our inquiry into the matter we are at last beginning to ask, for example, questions about the validity of such instruments as the Schonell 'Graded Word Reading Test' or the Neale Analysis of Reading

Ability in terms of judging the *overall* gains of children using i.t.a., or the comparative worth of i.t.a.-based approaches to instructional reading. At the broader and more elevated dimension of re-examining our entire structure of belief and practice in teaching literacy, old priority castles with their two and three tower structures are tumbling before the new technology and our burgeoning understanding of that infinitely varied creature known as man. In my own country those who went west in search of gold during the great rush of 1849 passed unknowingly over the potentially more valuable uranium fields of Colorado and Utah without so much as a moment's pause. This was understandable since they knew nothing of uranium or of the role it would one day play in putting men on Mars and building cities in the sky, to say nothing of fortunes which would be made. Now if we make it clear to learners by precept and example that their grades and credentials in school will in prime measure be based on their ability to feed back in prescribed fashion that body of knowledge which has been dispensed by book and teacher, we may be assured that most will seek to cultivate this particular area of ability. This is understandable because of the social realities which shape and manipulate our lives. And if we openly honor methodology, materials or media for the accomplishment of lesser ends than our times mandate, the majority will willingly persist in lesser ways. This is understandable in terms of Emerson's reminder that "what man needs most is someone who will make him do what he can."

When I told a fellow teacher about the conversation of the two teachers on the bus who were willing to allow the objectives and methods of their instructional program to be shaped by standardized test questions, he paraphrased the scriptures by suggesting that I forgive them since they knew not the consequences of their ignorance. But another colleague listening in, surely no less humane than the first, spoke the truth of our times when he countered that we can no longer afford to condone such unknowledgeable action. This is a call, then, to all aware and seeking educators not just to *make* man do what he can, but rather to make our fellow professionals more understanding and aware in *wanting* to do what they can to actualize the fantastic power and possibilities of the yet only half-born minds and spirits of today's learners. In reference to assessing and evaluating the learner, this suggests that common assumptions and customs must be modified and vastly augmented, such to promote progress along the gradient of advance which best meets what is required in the contemporary situation.

In the case of reading instruction, England's Ronald Morris (1963) states it well in writing that, "Where the testing of reading today is based on assumptions at variance with modern objectives, then tests must be rejected or revised." He goes on to say that:

> Certainly, if it can be shown that any change in the teaching of reading fits readers more adequately *for the needs of today*, then the change must be accepted even if it is found to be accompanied by *lowered* standards on tests constructed in days gone by. In fact it may well be a positive merit for children to do less well than their fathers, if it can be shown that by being less well-prepared to live in their father's world they are being better prepared to live in their own. (Italics by the present writer).

But it is necessary that we go beyond Morris in this age of man's new dispensation and insist that there are very central factors which need to be judged in assessing the adequacy of a reading program for meeting "the needs of today" for which we still do not have and, in certain instances likely will never have, adequate objective, standardized evaluation instruments. To judge a child a failure because *we* fail to reveal his capacities is indefensible excuse for such an acquittal. Likewise, to appraise the worth of an instructional program by submitting only those supporting factors which can be statistically objectified is a simple case of "the official culture striving to force new media to do the work of the old." There are, of course, those in positions of importance who disagree with this thesis and who, in essence, live on in a three-dimensional world of education at a time when our greatest minds in most fields of endeavor are deeply involved with the fourth.

This fourth dimension of education, now beginning to take form in the healthy smoke of ferment and change, has become partially susceptible to open-ended definition. The new conceptual and operational framework will increasingly seek to cultivate in students a wide-ranging curiosity, intellectual independence, fertile imagination, self-knowledge, a sense of adventure and inner excitement in learning, disciplined creativity, self-direction, openness to change, and an emerging spectrum of less easily verbalized attributes and capacities to be encouraged and led out in concert with the necessary acquisition of the basic skills. We see priority allocations of time and effort shifting to include greater development of the intuitive powers, mental organization and concentration; the ability to analyze, generalize and synthesize; general communication skills; inductive reasoning; awareness and perception; inquiry and discovery; and the capacity to cope with and formulate ever new life structures typifying the "art of the possible."

With the greater demands being placed on the child's day as new aims and objectives burgeon with our times, instructional approaches and instructional materials need to be judged on the basis of their potential for *multi-functional* accommodation of the modern classroom challenge. This is to say that twenty-first century man, who is the child in our classroom today, embodies a revolution of rising human expectations which mandates that we improve the efficiency of teach-learning. Thus, in an area of curriculum such as reading instruction, it becomes ever more common, as we teach for the traditional kinds of growth, to concurrently emphasize such development as learning the principles and structure of language, becoming more independent and self-directed, strengthening the rational intellect and the capacity for dealing with generalization and transfer, furthering the processes of discovery and intuitive grasp, enhancing self-confidence and confidence in the materials, methods and media of academe, greater fulfillment of general potential from the earliest years of schooling, and higher motivation for and interest in school work generally. In investigating reading programs on both sides of the Atlantic and in speaking at great length with perceptive reading teachers, I have been led to the careful conclusion that where the Pitman alphabet is embodied in instructional materials which take proper advantage of the medium, and where methodology does the same, i.t.a. is remarkably multi-functional in the manner suggested, fulfilling most or all of the above developmental demands. Nor does my itemization of growth and learning beyond the usual standardized measurements of gain in any sense exhaust either presently recognized so-called side benefits or probable additional advantages of i.t.a. language programs which the future may bring to light. As one who by nature and by design openly courts improved means for the attainment of constantly evolving new goals in this vital profession of ours, I concur with those many colleagues throughout the English-speaking world who see a clear need for new dimensions of assessing and evaluating i.t.a. if this worthy advancement is to enjoy the recognition and success which it merits. And those of us who have discovered i.t.a. in sufficient depth to know what some of these new dimensions should be are precisely the ones most obligated to lead the way in an assured crusade, not simply to increase the number of teachers using the Pitman alphabet but to encourage educators generally to broaden their base of judging and evaluating either student gains or the comparative worth of materials and media in response to the demands of contemporary education.

The search still goes on for objective criteria by which to estimate reading capacity and related performance and growth. Even at present we possess some reasonably sound and useful methods of identifying and appraising some of the less tangible, less substantive human factors in both the cognitive and the affective domains. Insofar as these are available and generally acceptable, they should be thoughtfully ushered into the arena of so-called scientific research and statistical data tabulation. But ever so much of value remains to be considered in this immensely important and most complex business of determining whether our particular educational program is, as William James expressed it, "an index of the nation's probabilities of advance in all ideal directions." Although not commonly enough done, it is not a difficult thing to readily illustrate that i.t.a. reading programs fully benefiting from the medium exercise most aspects of the remarkable linguistic ability which the young child usually brings to school in the very beginning, to a degree which is the exception in other reading approaches in general use today. Nor are we entirely lacking in measures of such things as intellectual independence, self-direction, analytic reasoning, awareness and perception, or fluency of self-expression and the like. Accordingly, we must press to have more thought and attention devoted to these factors by those who do the research work and the writing in the field of reading instruction, for the nurture of such attributes as these must be considered and furthered in *every* area of the curriculum as general developmental strands which make all learning more successful and significant. And any approach to instruction which accomplishes these aims in addition to and beyond the specific fact or skill learning must be openly encouraged.

Less susceptible to general acceptance is the correlative proposition that if we are to espouse the many equally enlightened objectives of education characterizing our new era of human understanding, for which we have no standardized and objective evaluation techniques, then we must judiciously acknowledge the valuable judgment of experience and expert opinion. If we refuse to openly support the application of such worthy considerations and appraisals in issues of consequence, then our decisions about either children or programs suffer from fragmentation and imbalance. But because of the more subjective and elusive nature of certain student characteristics, or seeming advantages of a given approach to instruction, we shy away from either making the effort to see deeply and surely or communicate our findings in the public forum. Oppenheimer observed that "there are children playing in the streets who could solve some of my top problems in physics, because they have modes of sensory perception that I lost long ago." The prime reason that Oppenheimer "lost" some of those modes of perception lies in the fact that they were neither recognized nor honored in his crucial formative years of schooling. In this regard I no longer hesitate, for example, to meet the comment about the i.t.a. that two symbol systems (which it is not, of course) are too confusing to the young child, by communicating the exciting findings which are emerging from the field of neurophysiology, with Montreal's Wilder Penfield serving as a leading spokesman, suggesting that, contrariwise, it is highly desirable that we expose the young child to multiple symbol systems from the very beginning at a time when those areas of the uncommitted cortex associated with symbol facility and related capacities can enjoy the most beneficial stimulation. It is entirely possible that a language development program using i.t.a. builds a child's foundation for a lifetime of increasing symbolic enterprise in a fashion superior to traditional media programs, and we should seek out any substantiation of such a possibility.

In paraphrase of Thorndike's postulate, I would propose that our inability to measure a factor of human intelligence does not make it non-existent. For many of us it is a strikingly significant fact that wherever i.t.a. is being used in fruitful fashion teachers typically enthuse about all manner of generally less-verbalized student accomplishments over and above the matter of exceptional decoding and encoding ability. But this fact has not yet captured the imagination and curiosity of a sufficient number of alert research people and influential authors reaching that segment of our profession responsible for administering and teaching language and literacy programs. Those who are either investigating new possibilities in multi-functional education, such as i.t.a., or who are interested in extending innovation which has enjoyed the proof of superior success, would do well to focus on the new dimensions of assessing and evaluating i.t.a. which six years and many thousands of man hours of experience suggest are central to a full and honest appraisal of its comparative worth in language development. It is not enough to praise these numerous "over and above" advantages of i.t.a. as a medium of reading instruction; what needs to be done is to insist that more research studies and more policy making decisions regarding the reading program in our school, our district or state focus on the whole broad field of human development possible within a modern program of reading and language.

Supportive of this viewpoint Morris (1963) writes:

> Indeed, if it is true, as has been argued...., that standardized tests, both of word recognition and of comprehension, are suspect in the present dynamic situations as perpetrators of outmoded assumptions about objectives and techniques in teaching, then it may be asserted that, if there is any obligation resting on teachers in respect of such tests, the obligation is to break free from these restrictions rather than submit to them....it is imperative that we look again at ways in which the teaching of reading is affected by assumptions inherent in current (tools and methods of measurement and evaluation).

In a recent speech at Stanford University Ernest Hilgard called on teachers to maintain their respect for subjectively evaluated accounts of personal experience in teaching, and to continue to stretch the frontiers of research and educational innovation by thoughtfully and imaginatively carrying their work beyond the limits of findings emerging from impersonal and "scientific" experimentation.

As one teacher expressed it, "The pride in achievement, the feeling of self-confidence and independence, and the sheer joy in learning in our i.t.a. class combine to make a classroom climate that the observer can feel and see but which research has not developed ways to measure." To the degree that we progressively insist on open and inquiring consideration of such centrally important dimensions of program evaluation as those just mentioned will our school systems break with patterns inhibiting teaching and learning worthy of student potential and modern imperatives. I for one wish to go on record that if instructional programs 'A' and 'B' both result in statistically similar substantive accomplishment, but observation and expert opinion point to the fact that program 'A' produces important concomitant gains and personal enhancements, then I shall encourage the use of program 'A' until such a time as it can be replaced by something superior, which the future will unquestionably produce.

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## 3. THE LANGUAGE ARTS CURRICULUM -- AFTER i.t.a.

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When I recommended to the superintendent and the staff of the Bethlehem Area School District, what now seems to be eons ago in the spring of 1963, that we experiment with the initial teaching alphabet, I thought we would be experimenting with an innovative medium for teaching reading. By October, Dr. Mazurkiewicz and I realized that i.t.a. provided more than this. The augmented alphabet not only inducted the child into the process of reading, but also gave him the freedom to use all the communication skills. What was provided for children was an integrated, functional experience in communication. The more children read, the better they wrote; the more they wrote, the better they thought; the more they thought, the better they talked; the more they talked, the better they read.

The variety of sentence patterns and vocabulary they used in conversation were matched by the variety of sentence patterns and vocabulary in readers and library books, and also appeared in their compositions.

The sentences the i.t.a.-taught youngsters wrote bore little resemblance to the kinds of sentences found in the traditional pre-primer. No more of

> I have a dog
> His name is Spot.
> He can run.
> He can play.

Instead the children wrote:

> When I ran down the road I fell down and I cut my elbow.
>
> Wherever I go I take a book.
>
> The birds migrate and come back pretty soon to the north from the south. The very, very, very first birds to come to the north is the dad robin.

The story that is my favorite this year was the result of an unexpected heavy snowfall in late spring. Asked to write how he felt when he got out of bed and saw the snow, a boy from Emmaus wrote:

> I looked out of my window this morning and saw all that snow and I thought "Oh hell, did I sleep through summer?"

It was this ability to write succintly and creatively that had to be preserved and nurtured as children moved through the elementary school. At the same time the basic skills needed to be mastered. We had no intention of nurturing written expression and ignoring the development of traditional spelling, correct usage, and the mechanics of writing, capitalization and punctuation.

There has been some complaint at this conference that everybody talks about transition but nobody defines it. It is difficult to define because nobody knows exactly when it takes place. I have attempted to explain it by identifying two stages. The first stage is an informal transition which occurs when the child demonstrates that he can read T.O. by reading a newspaper or a magazine at home, or reading T.O. material in school. In Bethlehem he has been selecting T.O. books from the central library since the beginning of school. He has probably been reading T.O. in advertisements or on television without conscious awareness. Who knows when this variety of transition occurs? No one can say because its earliest manifestations are as unobservable as is the ability of a baby's eyes to focus.

The second stage is a formalized process - i.t.a. characters are phased out and capital letters appear in the reader. The objectives are to introduce the child to the function of capital letters in carrying meaning in written communications and to begin transition to traditional orthography.

As children moved into formal transition activities, it was apparent that spelling books were of little or no value because almost half of the words the children could spell already. And the rest of the words could be better learned through grouping them according to spelling patterns or idiosyncracies.

The amazing thing to teachers was the fact that children were fascinated by the ridiculous - from their point of view - the irrational way in which many words were spelled - and took like ducks to water to the i.t.a.-T.O. dictionary and the regular third-grade level dictionary. Their one desire was to spell like mother and daddy.

Their ears were attuned to the variety of vowel sounds and they heard consonant sounds in the proper sequence. They could identify with little difficulty the number of syllables in words. These i.t.a.-taught children can do this - the able learners at the end of the first year, the average youngster at the beginning of the second year.

The essence of the problem is this: If we do not take advantage of what the child who has made the transition from i.t.a. to T.O. knows, what he instinctively does correctly because of his long acquaintance and continuing exposure to spoken English, if we do not teach him at his instructional level in reading *and* writing, then we inhibit learning, we destroy the creative impulse, we provide for the appearance of slippage or the plateau.

This I believe has affected the trend of the statistics reported by the English researchers. For it is my understanding that in transition they have done such things as placed the children in books at a second-year readibility level or have had them read the same text in i.t.a. and in T.O. In Bethlehem we have given the child basal readers at his instructional level. This is usually third grade for able and average learners. Incidentally, these readers contain sentence patterns similar to those he has been writing.

What needs to be taught to improve writing skill is discovered by examining his writing. Spelling patterns that give difficulty provide the focus for each week's spelling activity. Punctuation and capitalization are learned through a functional approach: what do periods, quotation marks, commas, capital letters signal to the reader?

To state this another way: what is to be taught, what is to be drilled is decided not because it is on the next page in the language book, but because the pupil's compositions have some weakness in communication.

It was apparent also that teachers needed help, if the integrated approach to language learnings was to be continued, and if the skills and understandings of the i.t.a.-taught child were to be conserved and nurtured.

The initial teaching alphabet fulfills all the requirements for the wedding of the science of linguistics and the skills of written communication. The linguist approaches language through phonemes, the sounds of speech, and morphemes, the blended phonemes which carry meaning. So we use the symbols of the initial teaching alphabet to represent speech sounds in writing and blend them to form words. The learner deals with the sentence, the thought unit, from his earliest introduction to print as he dealt with it from his earliest attempts to speak.

Therefore, it seemed most natural to continue to explore what linguists had to say about how we learn to communicate and to experiment with ways to use this knowledge to improve children's ability to read and to write, to talk and to think.

During the second and third year of the research supported by the Fund for the Advancement of Education the basic concerns were to replicate the studies of i.t.a. as a medium for teaching reading and to demonstrate how the innovation could be phased into a school system.

Teachers who received these i.t.a. youngsters at second and third grade were encouraged to try a diagnostic approach to the teaching of the mechanics of writing and to use the library and literary readers as the source of reading materials as well as the basic readers.

As this research project approached the final days, Congress passed the Elementary-Secondary Education Act, and we saw this as the opportunity to work seriously on developing guidelines for teachers in language arts. The original Title III proposal was written as a language arts curriculum development and demonstration center. The Department of Public Instruction requested that we continue the i.t.a. demonstrations and workshops, so since "the man who pays the piper calls the tune", the project became two-dimensional. The summer of 1966, a ten-day workshop on linguistics and its contribution to teaching the communication skills was offered to teachers of second through sixth grade from the Bethlehem Area Schools and the co-operating school districts of Northampton Area and East Penn, and three parochial schools using i.t.a. This workshop was planned by Dr. Carl Lefevre, now at Temple University, and Dr. Helen Lefevre, now at Philadelphia Jr. College.

Teachers were astonished to discover that they had been using linguistic signals peculiar to English all their lives without realizing their significance to communication. Basic to all understanding was the philosophy that a child's language was as much his own as his name, that to suggest that a speech pattern was wrong could be psychologically damaging. This did not mean that teachers should ignore crudities and unacceptable usage, but that their responsibility was first to accept the child's dialect as a dialect, and then help him to discover the many dialectic differences in the community and to develop a sensitivity for using the acceptable dialect for the situation.

Adults do this easily. As teachers, we switch dialects as we talk to parents or fellow teachers. Socially, we say "we fit in with the group." And the picture of the teacher in a cartoon is usually of one who uses school room dialect in inappropriate places.

The workshop was repeated this summer with Dr. Neil Postman of New York University, the co-author with Charles Weingartner of *Linguistics: a Revolution in Teaching*. Both Dr. Lefevre and Dr. Postman emphasized that linguistics provided a functional approach to grammar, that grammar was not dead. The linguists were providing us with a way to look at the grammar of English. The old grammarians had been forcing English into a Latin grammar mold. I intend no pun, but the mold *was* moldy and inappropriate. We can not say of English that verb is a verb is a verb. For instance,

> I run to my car, but I have a run in my stocking
>
> I spring to my feet, but I walk barefoot in the spring,
> and my mattress has springs

English is far from being a dead language; indeed, it is at this time the most lively language in the world. Other national tongues adopt English trade names, and the younger generations - and the plural is used knowingly - each younger generation improves the standard dialect by its distinctive dialect. Technology and science are two other stimuli for change.

These are the ideas that teachers must accept if they are to teach children who live in a very different world than we know in 1967.

But I have wandered far from Title III. After the 1966 workshop, a writing team of five teachers of second grade produced a tentative guide which included the results of two years of experimentation with the development of communication skills. It was encouraging to see that the guide and the inservice stimuli did improve the quality of composition in this year's second grade.

For instance, the first population as second graders wrote on the average 67 running words in a writing sample. This year the second grade writing samples produced a mean of 79 running words in December and 84 running words in May.

When we compare the writing samples of the second and third grades using Dr. Hunt's T-unit, we find that i.t.a. second graders were writing a mean of 1.92 T-units per sentence in May. T.O. third graders were writing 1.68 T-units and i.t.a. third graders were writing 1.96 T-units per sentence. It is apparent that the second graders whose teachers have had the benefit of inservice education in language development wrote at the maturity level of present third graders. More evidence of the value of inservice education is provided when the T-units per sentence of the first i.t.a. population, now in fourth grade, is examined. Their writing samples contained 1.73 T-units per sentence!

Following the 1967 two-week workshop, the second-grade group refined the tentative curriculum guide, and a third and a fourth grade tentative guides were developed.

Teachers reacted favorably to the inductive approach to teaching communication. Indeed teachers of fifth and sixth grades asked plaintively "Do we *have* to use spelling books and language books?" Of course, they didn't.

Six Saturday morning inservice meetings on children's language development sparked the expanded use of the overhead projector, an increase in units on poetry, and more attention to dialectic differences.

What is apparent to all of us who have been involved in this research project for four years is that in-service education which changes the teacher's attitude toward children's language development, and which provides teachers with basic knowledge about the science of linguistics and how communication skills are acquired and improved, does make a difference in children's learning.

As the first population has moved through succeeding grade-levels, the problem has been to break the mold - there's that word again - the mold that a teacher at a certain grade-level has established as expectations for the children at that grade-level. No longer can we talk glibly of third-grade level concepts or third-grade level readibility. The teacher must diagnose the level of competence of children and provide instruction and stimulation for a wide range of variability. When teachers say that children can read a third-grade level basic text in second grade and discuss the plot and characters intelligently, and then follow with the observation that the children have difficulty with the accompanying workbook, the only reasonable answer, in my opinion, is "That's your opportunity to teach."

Herein lies the thrill in teaching i.t.a. children - that by examining their compositions and day-by-day achievement, the teacher regains control of the teaching process and has conclusive proof of the results of his efforts. Too long have teachers followed the manual and "taught" what children already know. I am reminded of a teacher, the first year of the i.t.a. research project, who said "The children know and use all the symbols, but I am still teaching the twentieth symbol." Teaching? Not by any definition I would accept!

And what is also true is that developing reading skills is more than basal reader instruction - it encompasses all the areas of man's concern - science, social studies, literature, art.

To conclude, the year-by-year improvement of the i.t.a. youngster is dependent on the creativity of the teacher and that teacher's growth in understanding of how communication skill is acquired. It is buttressed by a willingness to experiment and to test the limits of children's understanding, to break out of a shell of gradedness and to use the resources of the world of books, the world of oral communication, the community of ideas.

I firmly believe that no plateau will occur if year by year we open doors, if we accept no boundaries, if we do not limit learning.

Children today live in a world in which boundaries do not exist - they accept a voyage to the moon as commonplace. Dare we who read Jules Verne's adventure stories as science fairy tales, dare we limit this generation? I do not think we dare.

## 4. OPTIONS AND OPPORTUNITIES IN i.t.a. TEACHING AND LEARNING

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This is the third year I have been given an opportunity to prepare and read a paper on some aspect of the conditions for, and consequences of, formal English language instruction that uses the Initial Teaching Alphabet. I have been trying, at these international conferences, to present a point of view that derives from a well-defined philosophic position. My convictions are those of a naturalistic humanist, a person who, first, considers issues within an evolutionary or developmental framework, second, finds man the producer as well as the focus of all values and valuing, and, third, defines education as a series of interpersonal relationships within which an animal-like infant is transformed into a human being. Thus, living means an involvement with others inside of the structures of language, meaning, and value. I must add, of course, since we are educators, that I am a product of, and do my work in, the American public school, an institution that has more than a passing responsibility for the support and advancement of a democratic society.

At Lehigh University, in 1965, I explored some of the implications of this position by pointing out that effective language teaching requires a systematic framework -- and there are many -- with which instructional aims can be defined and put into operation. At Cambridge University, in 1966, I offered an analysis of the mood and manner of language instruction as it occurs in early childhood and presented an argument for the maintenance of such informal and supportive procedures in the English language curriculum. Today, still thinking within the framework to which I am committed, I want to discuss briefly the idea of independent, and individualized, language study, which is one of the desirable and remarkable consequences of teaching with the Initial Teaching Alphabet.

Unlike my earlier papers, however, I do not intend to offer an analysis of curricular and instructional issues. What I have in mind is a report on the politics of education -- a description of certain forces in American education and the manner in which they have responded to the possibilities of the Initial Teaching Alphabet.

I have chosen the theme, "Options and Opportunities in i.t.a. Teaching and Learning," and propose to develop it as a critique of the quality of educational research, curriculum leadership, and classroom teaching that have appeared in response to i.t.a.

Let me confess immediately that I have few kind things to say about the generalized tendencies of those who are charged with educational responsibilities. The brilliance of the insight displayed by Sir James Pitman in the construction of the Initial Teaching Alphabet is all the more remarkable when it is set against the dullness, indeed, even the irresponsibility, of the response made to the medium by most (and that word is chosen carefully) of those who make education their business. It is not my wish to be harsh, but the history of the reception of i.t.a. has not demonstrated, and still does not demonstrate, the existence of much sensitivity and imagination among educational leaders.

Putting aside the foreshadowing of my conclusions, let me turn to this matter.

of independent learning as it appears in i.t.a. teaching, and use it to explain why I am disappointed by the unwillingness of most educators to use the medium as a major tool for the transformation of teaching and learning.

The Initial Teaching Alphabet triggers a large measure of quick success for all kinds of learners. As a rational medium, it allows children to generalize accurately phoneme-grapheme relationships with very little frustration. Simply put, i.t.a. is easy to learn. Children who are lucky enough to bring learning strengths to school are, as readers, in and out of the medium during their first year at school. Less fortunate children, when they are given emotional support and planned language stimulation, reach that goal in two years, as the exciting work done in Nashville by Dr. Lloyd Dunn and his colleagues demonstrates.

As i.t.a. children become successful readers and writers, they experience large measures and kinds of personal satisfaction very quickly in their school lives. They discover soon and early that they can step into networks of formal communication, and function profitably within them. Rapidly, these children search for and grasp purposes of their own with evident exhuberance. They find books they wish to read, and read them; and raise questions they wish to answer, and find printed answers for them; and become eager to make formal statements of their own devising, and write a great deal. They find freedom in their school work, the capability of entertaining choices and selecting certain ones to act upon. They embark, in other words, upon courses of independent, and obviously individualized, action with respect to everyday classroom tasks.

I am reporting observational data. I do not exaggerate when I say that every i.t.a. teacher reports these data. Any person who wishes to observe a slice of life in an i.t.a. classroom could, well within a week, make such observations for himself. These are "real" phenomena. They are "out there," existents in their own right, available for perception by anyone irrespective of his biases.

With respect to this one matter, the Initial Teaching Alphabet, and open-ended material of the sort found, for instance, in the *Early-To-Read* series, have given us a chance to reconstruct teaching and learning, and help children develop character components of great importance to our social order.

Such a claim, particularly when it is put so bluntly and baldly, might appear to be excessive. I hasten to assert, however, that there is a viable body of theory and experimentation in the behavioral sciences that supports the claim that purposefulness of the kind displayed by i.t.a. learners could lead to an instructional revolution.

Let me refer you, for instance, to perceptual theories of intelligence, particularly the one developed by Arthur Combs. Spend some time examining the self-concept theories of general behavior that range from the Self-Other relationship stated by George Herbert Mead in the 1920's to the latest discussions of Maslow, Fromm, and Murphy. Any basic text in general psychology or child growth and development will offer you considerable experimental evidence that the learner who knows he is successful is an open learner, eager to know more and to try his hand at whatever strikes his fancy. Rememember the point that is being made: a person is an energy system, and that energy is ready to flow, to accomplish great and important purposes, when the person is a learner who is confident, earnest, and brave. Such a person is very like the new man H. G. Wells envisioned in an old novel of his, *The New Machiavelli*. Wells has his protagonist say, "I know I am capable. I know I have ability. I know if I don't attempt the very biggest things in life, I am a damned shirk. The very biggest!"

Indeed, this is a big matter. Certainly each of us is aware of the literature that describes the baleful influence our mass, industrial, urban society has on most people. Do we not worry about helping people, who have lived and worked in this society all of their lives, find purpose enough to grow old gracefully and pleasureably? How often do we chide people for being followers who are betrayed into racing after the latest fashions in consumer goods? Yet, when a school program demonstrates that it can bring into being patterns of behavior that are admittedly needed, most educators turn away.

Let me put the matter to you in its entirety: first, we have a society in which many (most?) people fail to find serious purposes of their own, purposes meaningful and advantageous to them; second, there is observational evidence that by approaching a fundamental element in the school program, language instruction, in a new way, we make it possible for more children than ever to work for themselves, purposefully and meaningfully; third, such children could learn from this opportunity the skills they must have in order to challenge the impersonality of this society; fourth, we have productive theories, and successful experiments that derive from them, that relate to such data; fifth, we have a research apparatus that could tell us what is happening, and show us how to manage i.t.a. teaching and learning situations as productively as possible; sixth, we have educational leaders at every level who spend a great deal of time writing and speaking about democratic teaching, and the responsibility we have for meeting individual needs and freeing talent.

If you look at and examine such an argument, then certainly you must agree that something is terribly wrong in education. No genuinely professional group (and educators claim to be just this), faced with the needs of our age, would let an opportunity of the kind offered by i.t.a. slip by.

Since I am charging most educators with failing to attend to, and interpret, data that are under their noses, I must be responsive to the data under my nose. How shall I analyze and interpret the data I have gathered? I find that these data force me to frame certain conclusions; first, not enough educators are professional; second, a substantial group of educational researchers are irresponsible; third, school administrators deny with their in-school operations most of what they write and say publicly; and, fourth, someone had better do something by acting professionally, responsibly, and consistently.

These seem to me to be eminently supportable conclusions.

Let us examine them. Consider the first, which concerns professionalism. There was, about a decade ago, a widespread discussion in the education journals about professionalism. The arguments were many, and most were shrewd, and the consensus (obviously!) was all on the side of teachers being professionals. A few men did not choose to play the game. Myron Lieberman, Matthew Miles, and others offered considerable sociological evidence that educational leaders placed power, privilege, and prestige so far ahead of other goals that they had little chance to be other than irrelevant when they dealt with instructional matters. As for teachers, the evidence found them to be, in general, low-level, powerless, inept, bureaucratic functionaries.

Let me suggest another way of examining this matter of professionalism in education. I see no evidence that education has developed a cumulative tradition, and without it educators cannot be professional. A cumulative tradition makes it possible for new-comers to a field to begin accepting and acting out their obligations and responsibilities at a level of performance descriptive of the state of the art at the time each newcomer begins his work. Teachers are simply not prepared, by training or by temperament, to begin to teach in terms of all that is known about instruction. There is a body of cumulative knowledge in the field, but it is not used. For example, Gage's *Handbook of Research on Teaching*, which is one repository of what we know about instruction, is seldom seen or used in colleges of education or in school systems.

We happen to know a great deal about this business of creating learning activities for the immature. A good many matters that people believe are in doubt, are not in doubt at all. We continue to fail and fumble at matters we should be able to handle with *finesse*. We have known for generations how to teach free, open, and creative writing (check Hugh Mearns in the 1920's), how to help children be positively motivated for learning (check Dewey's turn-of-the-century *Interest and Effort in Education*), and how to encourage children to inquire into and discover the things and processes in the world around them (check Francis Parker, whose late-19th century prayer is worth noting: "Lord, protect Thou me from the foregone conclusion.").

A functioning cumulative tradition would have been able to handle the Initial Teaching Alphabet as one among many augmented alphabets, and been able to manage research with it as an extension of earlier research and inquiry. That did not happen. It will not happen until and unless there is a serious effort to treat education as an evolving discipline with a cumulative tradition to which attentive responsiveness must be paid.

Consider the second conclusion which charges many educational researchers with irresponsibility. In examining i.t.a. research, Dr. Richard Block of the i.t.a Foundation has raised certain serious questions about the validity of certain studies. He is far more cordial than I am. In looking over a sizeable slice of this research, I find that much of it stands as living testimony to the fact that if you ask a silly question, then you are going to get a silly answer.

In the preface to his *Handbook of Research on Teaching*, N. L. Gage observes that research on teaching "has lost touch with the behavioral sciences.... Nor has it provided (them) with return stimulation...." That is quite true. For example, most sociologists and child psychologists who have studied children since 1950 point out what TV viewing has done for language growth. In the face of these observations, one might assume that reading researchers would have begun to replicate the hundreds of studies from pre-TV days they love to quote in their tomes. Need I remind you that this work has been studiously avoided?

But even Gage turns out to be blind to one dimension of what he called "return stimulation." Please remember the basic observation upon which this paper rests: the appearance of independent, and quite serious, purposes in small children who study their language thru the i.t.a. medium. While I must agree that researchers have a right to study any hypothesis or theoretical construct that interests them, it is equally incumbent upon them, if they are to behave in a socially responsible fashion, to accept the observational data of classroom teachers, and the questions that derive from them, and use them as the bases for research.

The glory, and one clear reason for success, of the physical sciences is the tradition they still maintain of attending to commonplace observations. None of the productive sciences has ever lost touch with this realm, for it was in it that they found their historic impetus and it is from it that they continue to receive challenge and mystery. Far too many behavioral scientists appear to glory in egotism. They appear to be doomed to research ideas that come to them in the still of the night. They are mesmerized by their private nightmares to such a degree that much of what they report is of no help to the classroom teacher.

I want no misunderstanding at this point. I can hardly be anti-research in view of my plea for a cumulative tradition in education. What I am protesting is the studious -- on my worst days I even believe it is malicious -- avoidance by researchers of questions raised by classroom teachers, questions based on existential observational data. Specifically, what I protest is the continued need, now entering its fifth year, that you and I, people interested in the potentialities of i.t.a., have for intelligent research on the many elements of children's behavior that appear in the i.t.a. classroom.

I was entertained, a year ago, by a review of i.t.a. research in the *Phi Delta Kappan* which concluded with a plea that school administrators who are faced with a clash in judgment between the observations of a classroom teacher and the judgment of an educational researcher should always accept the judgment of the researcher. Well, now! Have experts not been known to clash? Do experts not bring their testimony to all sides of important issues? Is all evidence of conflict issues so clear and distinct that we can dispose of the conflict in finger-snapping time? I have listed this plea for the worship of the researcher in the section on "The Sin of Pride" of my still unfinished *Dictionary of Deplorable Facts*.

As far as I am concerned, until the educational researcher is willing, for example, to do a study on the attention span of i.t.a. learners -- you can see them work two, three, and four times longer than other children their own age, and that is an unqualified observational fact -- and help us find out what is going on, I do not propose to treat the educational researcher seriously.

Consider the third conclusion about educational administrators who say one thing and do another. We have, of course, lived with this a long time. I suspect that, in part at least, the problem derives from the fact that school administration is organized in such a way as to make it unnecessary for administrators to be privately responsible for what they say publicly. We need an anthropoligical insight here. Quite likely, what is going on is a delayed puberty rite, a ritual in which the manliness of leaders is demonstrated by the ceremonious recitation of value-laden words.

There is another way to approach the matter of administrative behavior. What seems to be involved so often is the drive of most school administrators to reduce everything to pattern and routine. They want least common demoninators that can make all elements of school life hew to predetermined lines. In *The Heart of Man*, Erich Fromm argues that those who search for rigid forms, stabilities, and relatively unyielding structures in the management of social affairs are actually lovers of death, necrophiles. How do you serve life in institutions that are structured in terms of the principles that describe death?

I offer these observations as a way of explaining what is seemingly inexplicable. In the P.T.A., at board meetings, and in public consultation with teachers, the school administrator offers ritualistic praise for all the elements in the American dream, and then returns to his business of school management in order to act out his death wish.

Something like i.t.a., which explodes the language responses of children in an impressive and messy way is troublesome. Even when administrators decide to use the medium, they resist following its unique options. Only last month I received a letter from a teacher with an i.t.a. class. She asked me to help her convince her superiors that her children, all of whom had passed through transition as readers, should not be given second grade readers from a series that sharply delimits vocabulary. She argued that the lives of children should be put before a curriculum routine. She was having trouble justifying this to her superiors.

I suggest that you pay attention to the Erich Fromms when they remind us that there is a thrust in the midst of life that is a love of death.

And so we reach my fourth conclusion: what are we, people who are sensitive to the implications of i.t.a., to the options and opportunities its use appears to have for the reconstruction of teaching and learning, to do about all this?

I am certain that you have many ideas. Let me offer you a few of my own. I think it might be sensible, thru the good offices of Dr. Block and the i.t.a. Foundation, to plan some kind of action meeting for the coming A.S.C.D. conference. Our meeting would not be on the agenda of the conference. But those of us who go to Atlantic City next March can meet to do the following: (1) prepare a statement of the observational data available in i.t.a. classrooms; (2) identify and state the research problems raised by these data; (3) circulate a request for the consideration of such research to all graduate schools and research agencies, and do what we can to get some action; (4) cooperate in the development of guidelines for teacher resource books that go beyond the existing manuals, placing emphasis on new ways of introducing the characters, developing competence in their use, and following through the transition into T.O.; and (5) plan ways for the reconstruction of the elementary curriculum that involve the application of the language strengths we know can be displayed by i.t.a.-taught children.

We ought to try to get into contact with one another late this fall or early next winter. We could do some preliminary planning through the mail, and then meet in some hotel room at A.S.C.D. And we could, at that time, offer suggestions to the i.t.a. Foundation about how we might use some of the time at the next international conference.

I believe this represents a reasonable action program. I think we must do something of this sort if i.t.a. is to become a widespread initial teaching medium. True, it has had a wide impact. It has shaken the reading establishment and, to a degree, unnerved them. But it has not succeeded as it should have, and I am not aware of any guarantee that its use will spread widely.

I picked up i.t.a. and learned to use it because of my convictions about the nature of child life, and my belief that each generation must grow up to be better men than their fathers. I do not propose to stand idly by and lose the chances offered by i.t.a. The conflict we are in need not be dreaded. Such conflicts, Whitehead pointed out, can be opportunities, not disasters. We have a solid intellectual case to make with respect to i.t.a. and we ought to raise an infernal howl about the way in which fascinating questions have been rejected.

In describing myself as a philosopher, I must add as a conclusion that I am a social philosopher. For me, philosophy must ultimately bake bread. I hope I have been able to serve the cause of man which for me is no more than the fulfillment of generous and humane goals through the uses of intelligence.

## CONCLUDING REMARKS

This conference has concerned itself with the Initial Teaching Alphabet and what has been and can be done with it. It would be difficult, if not impossible, for me to summarize what has been said in the preceding papers. For one just beginning to develop a curiosity about i.t.a., certain questions must inevitably come to mind. What does i.t.a. do? How well does it do it? And finally, if it does as well as its proponents claim, why isn't it more generally accepted? The answer to the first two questions must be that i.t.a. itself does nothing. It is simply a medium through which a creative educator may work. Objectively, it can be stated that the great majority of studies using control groups have found that children read better, write more, and spell at least as well as children taught with the conventional alphabet. This is true despite the fact that, as a new medium, we have had little opportunity to learn how to use it *most* effectively. We have had a limited range of materials and these seem to have worked well. We have not clearly identified the characteristics of those students who profit most from i.t.a. as compared with those who profit least (given the specific materials available). It is frequently said that those who profit most are the bright children, but, perhaps, we have set our hopes too high for even i.t.a. If we can show that the slower child learns faster with i.t.a. than he does with T.O., then it is pointless to ask why he doesn't progress as rapidly as his brighter brothers and sisters. This is too much to ask from any alphabet.

From a more subjective point of view, there seems to be an almost unanimous response on the part of the classroom teachers who have used i.t.a. and have had experience in teaching children with the conventional alphabet. They report that i.t.a.-taught children are "different". They report increasing self-confidence and independence of work. They report a greater enthusiasm for reading in particular and learning in general.

It is difficult to say how much of a role i.t.a. may play in preventing deterioration. Dr. Mazurkiewicz has reported a reduction in the number of remedial reading problems in the Bethlehem, Pennsylvania area. It may never be possible to measure how many children are able to sustain their initial curiosity and enthusiasm for learning because the i.t.a. materials are more interesting and challenging. If we can generalize from Dr. Harry Harlow's studies with higher apes, which suggest that one must learn how to learn, it may be argued strongly that a consistent medium such as i.t.a. may prevent learning inappropriate kinds of behavior and reinforce notions of the logical and the consistent which are so critical to later learning. It may be critical for the child to start out with a consistent medium and then learn its idiosyncrasies rather than to start out with an idiosyncratic phenomena and simply assume that is characteristic of much of what he must learn. A consistent medium may permit the teacher to develop a much greater appreciation of the nature of the English language than is presently possible.

I do not think it is appropriate to dismiss the role of sheer pleasure in the child responding to challenging i.t.a. materials. If it could be demonstrated that i.t.a.-taught children did not read any better at the end of any fixed period of time, but it could be shown that he has enjoyed his initial educational experience to a greater degree, then this alone would be sufficient reason for using i.t.a. Nor can one easily write off the enthusiasm teachers show as their children respond enthusiastically. There is something productive about this interaction, and i.t.a. appears to capitalize on it.

The question remains, if i.t.a. is as effective as its proponents claim, why is it not used more extensively? In part, the answer to this is that it is being used in more places and in more ways than one might reasonably expect for so new an innovation. In part, however, the answer must be one of psychic and economic commitments on the part of many reading experts and publishers of commercial materials. We make very different assumptions about the nature of the English language when we use i.t.a. It requires a thorough re-thinking of how to teach reading, writing, and even speaking.

Much of the resistance is economic in character. Publishers are, indeed, a part of the educational system. Perhaps, educators do not like to admit that the decisions publishers make to produce or not to produce a particular series of books limits the range of choice of the classroom teacher but it is a real force nonetheless. Education is a business involving billions of dollars each year. If i.t.a. is indeed as effective as its proponents claim it to be, and, if it were to be adopted on a wide scale, it would require many major publishers to totally re-examine their materials. Simple transliterations of material from T.O. to i.t.a. may not be enough. It may require finding "new experts" to prepare new texts, workbooks and teachers' manuals. They may have to re-examine their basic approach to the teaching of reading. It may not be appropriate to simply take a publisher's fourth-grade books and present them to second graders who can read at this level. The maturity and interest levels of these students is different from their older counterparts who may have used such books quite effectively. If the alphabet is effective, the total curriculum must be reconsidered. Profits and royalties are clearly at stake. This does not mean the cost of education will be higher. Even with T.O., each year major corporations invest large sums of money in the production of new series, supplemental books, and visual aids. The cost of i.t.a. materials presently available is comparable with comparable T.O. materials. Nonetheless, there is resistance to change, and it is easier and less risky to produce the traditional than the innovative. It requires less imagination to work within the framework of what we "know" about English and reading from over 100 years of research in T.O. (even though we seem to have made pitifully small progress in the last 100 years) than to question these concepts and explore new educational avenues.

The resistance does not seem to result from the lack of positive research results. Indeed, it is probably unusual for research to effect decisions of this nature at all if Jeanne Chall is correct in her statement in her recent book, *Learning to Read: The Great Debate* (McGraw-Hill), "the findings of research in beginning reading ... are not an important factor in practical decisions about reading instruction." The future of i.t.a. undoubtedly will be decided by economic considerations and the strongest voice will be where the greatest sums of money are. Perhaps that is as it should be. Perhaps not.

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